The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 506.---Vol. XV.] LONDON: SATURDAY, MAY 3, 1845. [Price 6d.

TWO VALUABLE STEAM-ENGINES FOR SALE, at WHEAL KITTY, in the parish of St. Agnes, Cornwall.—TO BE SOLD, BY AUCTION, by Mr. Penberthy, at Wheal Kitty, in the parish of St. Agnes, on Wednesday, the 14th May next, by Twelve o'clock at noon, a 41-in. STAAM PUMPING-ENGINE, with brass condensing work, 6-ft. stroke, equal beam, boiler eight tons, with steam-pipes, &c., complete; a 16-inch STEAM WHIM-ENGINE, four feet stroke, with fly-wheel, shaft, and crank—whim and shaft to fit. Also a spare FLY-WHEEL, to suit the above.

For view, and particulars, apply at the mine. A punctual attendance is requested, as they will be sold without reserve.—Helston, April 25, 1845.

TO CAPITALISTS, TIMBER MERCHANTS, AND OTHERS.

MESSRS. ELLIS and WALES will submit to PUBLIC AUCTION, at Garraway's, on Thursday, May the 15th, the newly-erected SAW and PLANING MILLS, advantageously situate on the bank of the SURREY CANAL, near the Plough-bridge, and adjoining the entrance to the Commercial and East Country Docks. The property is held for a term of fifty-eight years unexpired, at £60 per annum. The dimensions of the mill are 40 feet by 103 feet; the ground comprised in the lease covers an area of nearly one-third of an acre, having 300 feet frontage to the canal. The LEASE will be OFFERED, with all the newly-erected BUILDINGS, including the powerful STEAM-ENGINE, together with the BARGE now moored alongside—the several saws, fixtures, and utensils on the premises, of which an inventory will be appended to the sale particular.

Particulars may be had of J. Spyer, Esq., solicitor, Broad-street-buildings; at Garraway's; on the premises; and at the offices of the auctioneers, 150, Minories.

IMPORTANT SALE OF MINING SHARES,

Paying large Dividends, and presenting very eligible investments for capital.

MR. C. WARTON begs to announce, that he is directed by the executrix of the late Henry Gilbard, Esq., to SELL, BY AUCTION, at the Auction Mart, London, on Tuesday, May the 20th, at Twelve o'clock, SHARES in the following important BRITISH MINES—viz., Levant, Fowey Consols, Dolcoath, the Providence Mines, South Roskear, Hallenbeagle, Brewer, Wheal Henry, Wheal St. Clear, Wheal Robins, Wheal Norris, Rose Consols, East Wheal Crofty, Wheal Providence, &c.

Particulars are preparing, and may be had in due time, at the Auction Mart; at the Golden Lion Hotel, Liverpool; Pearce's Hotels, Truro and Penzance; and of Mr. Warton, auctioneer and estate agent, 38, Threadneedle-street.

Freehold Copper Rolling Mills, Hammer Mills, Furnaces, Refinery, Foundry, and Factory, with very valuable water-power, with a fall of above 5 feet 8 inches, on the River Wandle, in Garratt-lane, Wandsworth, Surrey, fully equal to between 70 and 80-horse power, all well enclosed, with a Manager's Dwelling-house, good Garden, numerous Workmen's Cottages, with Gardens, and several valuable parcels of Meadow Land, containing altogether nearly twenty acres, most eligibly situate, within one mile and a half of Wandsworth, in the county of Surrey, and about seven miles from London.

MESSRS. DRIVER have received instructions to OFFER to PUBLIC COMPETITION, at the Mart, on Tuesday, the 27th of May, at Twelve o'clock, the above most valuable and desirable FREEHOLD PREMISES, exonerated from land tax, which are now, and have for nearly a century and a half, been worked by the Governor and Company of Copper Miners in England. The premises comprise a convenient small dwelling-house for a manager, with a most excellent garden; a building, about 98 feet by 70 feet, called the Rolling Mill, and a very capital iron water wheel, 18 feet diameter by 14 feet in width; a hammer mill, about 70 feet long, with two other water-wheels, one 15 feet and the other 12 feet diameter; a new building called the Refinery and Foundry, about 85 feet by 42 feet, with three furnaces, stabling, sundry workshops, and a counting-house; an Artesian Well, 165 feet deep, with 5-inch copper pipes; twelve workmen's cottages, and sundry parcels of most desirable and valuable meadow land, containing altogether about twenty acres.

To be viewed on application to Mr. Bashford, residing on the premises, of whom printed specifications, with plans annexed, may be had. Specifications and plans may also be had at the Spread Eagle, Wandsworth; at the offices of the company, Old Broad-street; of Messrs. Roy, Blunt, and Co., solicitors, Lothbury; at the Auction Mart, near the Bank; and of Messrs. Driver, surveyors and land agents, 8, Richmond-terrace, Parliament-street, London.

STAFFORDSHIRE.

COAL AND IRONSTONE MINES.—TO BE SOLD, BY AUCTION, in the month of MAY next, by Mr. CORBETT, auctioneer, Bilston, the valuable FREEHOLD ESTATE and COLLIERIES, situated at Darlaston-green, adjoining to the Birmingham Canal and the Grand Junction Railway, containing about sixty acres; and also the MINES and MINERALS under the same; together with the ENGINES, PITS, the very complete CEMENT-WORKS, FREESTONE QUARRY and MACHINERY thereon.

N.B.—The Birmingham Coal Company are now sinking a shaft to prove the Ironstone Mines, especially the Blue Flats, in the upper part of the estate—the lower part having already been sufficiently proved by the practical working of the same.

For further information apply to Mr. Rawlins, solicitor; Messrs. Tyndall and Son, solicitors; Mr. Lawrence, at the Birmingham Coal Company's Offices, all of Birmingham; Messrs. Cope and Son, mine agents, West Bromwich; or to the auctioneer, Bilston.

VALUABLE LEAD MINE FOR SALE.—TO BE SOLD, either the WHOLE or PART of that most promising LEAD WORKS, called CRAIG-Y-MWN, near Llanrhaiadr, in the county of Denbigh, consisting of an extensive tract of RICH MINERAL GROUND, and in the immediate neighbourhood of the old noted lead-works, called Llangynog. Several tons of lead are now lying on the surface, and its position renders it most advantageous for the bringing in of a deep level to unwater the works.—Satisfactory reference can be given.

For terms and particulars apply to Mr. Bibby, of Llanfyllin, Montgomeryshire.

VALUABLE IRON MINES FOR SALE, in the UNITED STATES OF AMERICA, the MUHLENBURG, or GREEN RIVER, IRON-WORKS, in the county of Muhlenburg, and STATE of KENTUCKY. The property extends to about 8000 acres of land, covered by a charter from the State Legislature. The iron ore is rich and inexhaustible; upon the property there is an abundant supply of all the essentials of the manufacture—coals, timber, sand, limestone, &c., in close proximity. The works are within twelve miles distance, over a perfectly flat country, of the Green River (navigable to a point far above them), which falls into the Ohio, and thus opens to their produce the markets both of the east and of the west. It is believed that no spot in the world presents greater advantages, in combination, for the production and manufacture of iron.—Further information may be obtained on application to Messrs. Chalmers and Farquhar, advocates, 147, Union-street, Aberdeen.

Aberdeen, April, 1845.

AN EXTENSIVE QUARRY OF IRONSTONE ON SALE in NORTH WALES, situated near the sea, and connected with the adjoining shipping place by a railway of about two miles in length, constructed by the present proprietors of the quarry. The ironstone is of an excellent quality, and has been used in several of the South Wales Iron-Works. The ground is held upon a long lease, at a low royalty, and is comprised of two farms, of about eighty acres each—the freehold of one of which may be now purchased. In the present opening, which is on the side of a hill, and worked by open cast, there is a perpendicular face of ironstone, of about fifty feet, the thickness of which will increase to upwards of 100 feet as the workings proceed up the hill. The rock under foot (the surface of which is on a level with the railway) contains, to all appearance, an inexhaustible bed of ironstone. The present opening is capable of producing 50,000 tons per annum, at a cost of 2s. per ton, including shipping the ore and every other expense.

A level has been already commenced (and which may be finished in a few months, at a trifling cost), leading from the railway to another portion of the ground, where an equal, or a larger, quantity of ironstone, of a similar quality, may be raised at the same low rate.

To ironmasters, to capitalists who require investment, or to persons desirous of forming a lucrative concern under the management of a joint-stock company, these works present every inducement for the outlay of capital.

For further particulars apply to Messrs. Williams and Bruse, 3, Lothbury; or George Homfray, Esq., 3, Norfolk-street, Strand, London.

CORNWALL.—VALUABLE FREEHOLD ESTATE, in the rich Mining District of LISKEARD, with the DUES of a promising COPPER MINE thereon, RIGHTS of COMMON, TIMBER, &c., FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, the FEE-SIMPLE of an excellent ESTATE, situated within a short distance of the market town of Liskeard, comprising a DWELLING-HOUSE and all SUITABLE FARM BUILDINGS, in good repair, with THREE HUNDRED AND TWENTY ACRES of superior LAND. A rich copper mine, from whence considerable returns have been recently made, adjoins the estate, the lodes of which run into this property, and are now in course of working, with the most promising appearance of success; there is, besides, a large quantity of valuable timber thereon, with rights of common belonging. It will be sold at a price, including the dues of the mine, or for a less sum, reserving one-fourth part thereof, as may be agreed on. A more desirable opportunity for investment cannot be offered.

For all further particulars, and to treat for the purchase, application may be made to Richard Sargent, Esq., solicitor, 10, Norfolk-street, Strand, London; or to John Sargent, Esq., solicitor, Liskeard.—*This will be advertised but once.*

THE PATENT GALVANISED IRON COMPANY beg leave announce to the public, that they are prepared to SUPPLY ROOFING, SHIP SHEATHING and FASTENINGS, CHAINS, and the endless variety of articles to which iron, not subject to rust, may be applied.—Testimonials may be seen by application at the office, 3, Mansion House-place, London.

CAUTION.—THE PATENT GALVANISED IRON COMPANY having ascertained that certain PARTIES are INFRINGING THEIR PATENT by the MANUFACTURE and SALE of a SPURIOUS and COUNTERFEIT ARTICLE, to the injury of the company and the detriment of the public, hereby give NOTICE, that this COMPANY have the SOLE PRIVILEGE of manufacturing and selling IRON COATED WITH ZINC, commonly called "Galvanised Iron," and that they will inflict the utmost PENALTIES of the law upon all PERSONS MANUFACTURING or SELLING the same without their authority, as well as upon all persons buying or using any Galvanised Iron not manufactured by them, or sold by their authority.

3, Mansion House-place, London, Jan. 24, 1845.

PONTYPOOL, Monmouthshire.—TO BE LET, an important and valuable TRACT OF MINERAL PROPERTY, known as the GRAIG DDU ESTATE, and situated in the immediate vicinity of the extensive iron-works of Pentwyn and Abersychan. This property comprises the whole of the seams, both of COAL and IRON ORE, employed in the manufacture of iron, in the South Wales district, and would form, in conjunction with some other smaller properties adjoining to it, and which may likewise be secured upon advantageous terms, a most valuable SITE for the ESTABLISHMENT of an IRON-WORK—there being no situation unappropriated in the neighbourhood which is so well adapted for that purpose.

In addition to the seams of coal, which are applicable to iron-works, this property contains likewise a SEAM OF RED ASH COAL, well known in Monmouthshire as the "Cwm Tillery Vein." This coal has been already worked to some extent by level—is in considerable repute for *household purposes*, and it is considered that a lucrative COLLIERY may be established thereon. With the exception of this seam, the whole of the coals are admirably adapted for *steam-packet purposes*; and are believed to be fully equal in quality to those worked so extensively, at Risca, by Messrs. Russel and Hookey. The same coals are exclusively worked for the supply of the Pentwyn Iron-Works, in properties immediately adjoining to this, and there cannot, therefore, be any material difference in the quality of the minerals. The following extracts from Mr. Mushet's able *Papers on Iron and Steel*, will serve to show the comparative quantities of carbon contained in the respective seams worked at Risca Collieries and at Pentwyn Iron-Works.

		Carbon.
RISCA	Upper Rock Vein	66·11 per cent.
	Lower ditto	61·78 „
	Big Vein	68·016 „
PENTWYN	Big Vein	71·87 „
	Troydog Coal	68·2 „
	Meadow Vein	63·65 „
	Old Coal	63·50 „

It will thus be seen that the latter coals are considerably more *carbonaceous* than the former, and are, consequently, of greater value.

The Graig Ddu property is not more than a mile distant from the Monmouthshire Canal, with which it is already connected by a tramroad; and the Cwm Frwd Cer Branch of the projected Newport and Pontypool Railway is also proposed to be extended to within a short distance of it. The total distance from Newport, the shipping port, is about eleven miles only.—Any parties who may be desirous of taking these minerals, with a view to the establishment either of an iron-work or colliery, will be treated with upon liberal terms; and any further information relative thereto, may be obtained on application to Mr. William Llewellin, jun., mining engineer, Pontypool; or to Mr. Charles J. Parkes, Wentoland Cottage, Pontypool.

MINERAL FIELD IN THE CADDER ESTATE, NEAR GLASGOW.—TO LET, for such a number of years as may be agreed on, and entered to at Martinmas next, the BLACKBAND IRONSTONE, COAL, and LIMESTONE, in the FARMS of JELLYHILL, BEARYARDS, CROSSHILL, CADDER-MILL, and part of HILTON—bounded on the north by the Forth and Clyde Canal, and the Mineral Field, let to the Carron Company; on the west by the Kenmure Mineral Field, let to the Summeries Iron Company; and intersected on the south by the Edinburgh and Glasgow Railway.

Ground will be feued on the side of the canal, for the site of iron-works, if required.

For further information application may be made to John Geddes, Esq., mining engineer, Edinburgh; or to John Thoms, factor for the proprietor, residing at Keir Mains, by Dunblane, who will receive offers till the 15th of May next.

Keir Mains, 24th April, 1845.

MANGANESE.—A MANGANESE MINE TO BE LET, ON LEASE, most conveniently situate in a neighbourhood where a considerable quantity of the mineral is used, and about two miles from a seaport town; the quality of the ore is good, and can be raised in large quantities at small expense. The TOOLS, &c., may be taken at valuation.—From SIXTY to EIGHTY TONS of MANGANESE ORE TO BE SOLD.—Apply to J. Nind, Esq., Grand Home House, near Aberdeen, N. B.

ANGLO-MEXICAN MINT OFFICE, No. 5, Broad-street-buildings, London, April 25, 1845.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders in the Anglo-Mexican Mint Company will be HELD at this office on Tuesday, the 6th May next.—The chair will be taken at One o'clock precisely.

G. B. LONSDALE, Secretary.

IMPERIAL BRAZILIAN MINING ASSOCIATION, Winchester-house, Broad street, London, April 23, 1845.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the proprietors of shares in this association will be HELD at the London Tavern, Bishopsgate-street, on Thursday, the 15th of May next.—Notice is hereby also given, that, at this meeting, the election will take place of three directors, in the room of Thomas Gibson, Esq., Sir I. L. Goldsmid, Bart., and John Wray, Esq., and of one auditor, in the room of H. J. Brooke, Esq., who go out of office by rotation, but who, being re-eligible, offer themselves for re-election.

The chair will be taken at Two o'clock precisely. GEORGE THOMAS, Sec.

ST. JOHN DEL REY MINING COMPANY.—The FIFTEENTH ANNUAL GENERAL MEETING of the proprietors of the St. John del Rey Mining Company will be HELD at the company's office, No. 8, Tokenhouse-yard, Lothbury, on Friday, the 30th inst., at Two o'clock precisely. At this meeting two directors—viz., J. D. Fowles, Esq., and Robert Addison, Esq., will go out by rotation, but are eligible to be re-elected.

GEO. D. KEOGH, Secretary.

8, Tokenhouse-yard, Lothbury, May 2, 1845.

WEST WHEAL JEWEL MINING ASSOCIATION.—Notice is hereby given, that the ANNUAL GENERAL MEETING will be HELD at the company's office, as under, on Monday, the 12th of May next, at Twelve for One o'clock precisely. By order of the board,

57, Old Broad-street, April 14, 1845. ROWLAND NICHOLSON, Secretary.

WANTED, A HIGH-PRESSURE STEAM-ENGINE, of from 30 to 35-horse power, with BOILERS, and all complete.—Address, stating particulars and price, to Messrs. Rennie and Co., contractors, Newport, Monmouthshire.

STEAM-ENGINES, from 8 to 16-horse power, ALWAYS in STOCK.—Apply to Mr. Capper, engineer and ironfounder, Birmingham.

Price.....£12 per horse.

N.B.—CASTINGS AND PIT WORK MADE TO ORDER.

BY THE KING'S ROYAL LETTERS PATENT.

IMPROVED COLLIERY BOW AND HOOK.—The PATENT IMPROVED COLLIERY BOW and HOOK effectually prevent the loss that frequently occurs in the falling and breaking of corves at the bottom of the shaft, and are complete safeguards to the pitmen in descending to, and ascending from, their work. Both are of very simple construction, and readily applicable for the purposes intended. The Hook is particularly calculated for sinking shafts, and where heavy and bulky materials are sent down and brought from the pits; it may also be employed to advantage in lead mines, as well as at cranes in warehouses and on board ship; it not only is perfectly secure, but it cannot foul or become obstructed by any projecting substance, or injure the combings of vessels delivering the cargoes, is used with the greatest facility, and when once hooked on cannot be accidentally disengaged. The Hook is also adapted for connecting waggons and carriages together on railways, as it can be speedily taken off, without loss of time. The Improved Bow is in use, and may be inspected at Gosforth, Kenton, and other collieries. The Hook seen at Mr. Edmund Graham's, High Crane, or at the office of S. Reed (the patentee), Newcastle-upon-Tyne.

Licenses will be granted on liberal terms, by application to the patentee, if by letter, post-paid. Agents for the manufacture of the Bow and Hooks, Messrs. Elliott, Low Friar-street, Newcastle-upon-Tyne; and Messrs. D. and E. Bailey, 272, High Holborn, London.

Parties using the Improved Hooks and Bows without license will be liable to the consequences of infringing the Patent Right.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Tuborne, Cornwall.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriar's-road, London.

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN. J. MURDOCH (successor and late assistant to Mr. Hebert) informs INVENTORS and PATENTEES, that at his OFFICE they can obtain

REFERENCE TO A CLASSIFIED LIST OF PATENTS,

THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.

SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.

FINISHED and WORKING DRAWINGS executed with accuracy and despatch.

RYE AND THOMAS, MINE AGENTS AND DEALERS IN STOCKS, RAILWAY AND OTHER SHARES, 80, *OLD BROAD-STREET, LONDON.*

MINING OFFICES, St. MICHAEL'S-ALLEY, CORNHILL, LONDON.—MESSRS. WATSON and GUELL have received instructions to PURCHASE SHARES in East Wheal Rose, Wheal Trelawney, Tresavean, North Rose, North Roskear, East Wheal Crofty, and Baristown Mines; and to SELL SHARES in South Basset, West Basset, South Caradon, West Caradon, Wheal Henry, West Maria, Botallack, Wheal Fortescne, and the Caradon Mines.—May 3.

MINING RECORD OFFICE, 5, SHORTER'S-COURT, THROGMORTON-STREET.—The business of this office not being confined to the purchase or sale of shares in mines, railways, and other undertakings, but open to negociations as relates to mineral property, as also the appointment of practical agents to inspect and report thereon, Mr. HENRY ENGLISH will be happy to communicate personally, or otherwise, with parties who may wish to dispose of any mineral tracts, or desirous of investing capital.—Office hours Ten till Five.

5, Shorter's-court, City, April 26, 1845.

ESTABLISHED 1834.

MR. W. FORDYCE, SHAREBROKER, 15, GREY-STREET, NEWCASTLE-ON-TYNE.

AT a MEETING of the COAL and IRONMASTERS of SOUTH STAFFORDSHIRE, Owners and Occupiers of Works between Birmingham, Dudley, and Wolverhampton, held at the Union Inn, in Union-street, Birmingham, the 24th day of April, 1845,

PHILIP WILLIAMS, Esq., in the chair.

Thomas Badger, Esq.	Mr. John Walker
Mr. Thomas Davies	Mr. Thomas Morris
Mr. William Ward	Mr. Henry Smith
Mr. Sparrow	Mr. Underhill
Mr. Thomas Bagnall	Mr. R. Bradley
Mr. Henry Williams	Mr. John Williams
Mr. G. Thorneycroft	Mr. Charles Birch
Mr. George Downing	Mr. William Baldwin
Mr. Edwin Pemberton	Mr. George Hickman
Mr. George Skey	Mr. G. Griffin
Mr. J. H. Blackwell	Mr. Sparrow, jun.
Mr. William Barrows	Mr. John Pew
Mr. William Howells	Mr. G. R. Hickman
Mr. Walter Williams	Mr. Thomas Page

The subject of the branch proposed to be made by the Grand Junction Railway Company from Fryars-park, in the parish of Wednesbury, to Dudley, for making which a Bill has been introduced into the House of Commons, having been fully taken into consideration at this meeting, and the meeting being of opinion that it was wholly inadequate to the wants of the South Staffordshire Coal and Iron District—

Resolved unanimously—

That the Grand Junction Railway Branch from Fryars-park to Dudley be opposed, and a petition against the same signed.

That Messrs. Philip Williams, Sparrow, Badger, and Thorneycroft, be appointed a deputation from this body to conduct the opposition, with power to add to their number.

That these resolutions be advertised in such manner as the deputation shall think proper.

PHILIP WILLIAMS, Chairman.

The chairman having left the chair, and Thos. Badger, Esq., being called to the same—

Resolved unanimously—

That the best thanks of the meeting be given to Philip Williams, Esq., for his kindness of calling together this meeting, and for his ability in presiding over it.

THOMAS BADGER.

THE ELECTRIC TELEGRAPH.—COOKE AND WHEATSTONE PATENTEES.

The ELECTRIC TELEGRAPH has been adopted on the following LINES:—

By ORDER OF THE LORDS OF THE ADMIRALTY, on the South-Western Railway, as a GOVERNMENT TELEGRAPH from the ADMIRALTY, Whitehall, to PORTSMOUTH, above NINETY MILES.

On the same line, as a Commercial Telegraph from Nine Elms to the Port of Southampton, 77 miles—with a branch to Gosport, 15 miles.

On the London and Blackwall Railway.

Great Western Railway, from London to Slough, 18 miles—the Windsor Telegraph.

Yarmouth and Norwich Railway, a "Single Way," 20 miles.

London and Dover Railway, from Tunbridge to Maidstone, a "Single Way," 18 miles.

Part of the Oldham Branch Railway.

Part of the Leeds and Manchester Railway.

Part of the Edinburgh and Glasgow Railway.

The Dalkey (atmospheric) Branch of the Dublin and Kingstown Railway.

London and Birmingham Railway—viz., from Northampton to Peterborough—a "Single Line," 47 miles.

In addition to the above, the Telegraph is about to be laid down on several "single lines" in different parts of England, Scotland, and Ireland.

Mr. Cooke is prepared to grant licences for the use or erection of the Telegraph for entire districts of country, where the boundary can be accurately defined.

Mr. Cooke will also undertake to erect a Telegraph in any part of the United Kingdom for a fixed amount.

For further particulars apply to W. Fothergill Cooke, Esq., Kidbrooke, Blackheath; or to Robert Wilson, Esq., solicitor, 1, Copthall-buildings, London.

SUSPENSION BRIDGES.—ANDREW SMITH'S PATENT GALVANISED WIRE ROPE and CHAIN SUSPENSION, or PARABOLIC TENSION, BRIDGES, are so constructed that the lateral oscillation and vibration (so destructive on the ordinary suspension principle) are entirely prevented by this improvement. For deep ravines or cuttings, the Parabolic Tension Bridge costs much less than those on the suspension principle—piers, &c., being entirely dispensed with.

Drawings and models may be seen, and all necessary information had, on application at the offices, White Lion-court, Cornhill; 69, Princess-street, Leicester-square; or at the works, Millwall, Poplar.

SIR W. BURNETT'S PATENT—THE CHEAPEST AND BEST PROCESS for the PRESERVATION OF TIMBER, CANVAS, CORDAGE, COTTON, WOOLLEN, &c.—LICENSES GRANTED to NOBLEMEN and GENTLEMEN to use the preparation; and to others, for the purposes of trade, on advantageous terms.

HYDRAULIC APPARATUS AND TANKS,

for the expeditious preparation of the above materials, at the principal station, MILLWALL, POPLAR, nearly opposite Greenwich.

Numerous SPECIMENS and TESTIMONIALS may be seen, and every information obtained, at the office, 53, King William street, London-bridge.

PATENT GALVANISED IRON COMPANY.—CAUTION.—This PATENT was decided by the Jury, in the case of Patteson *v.* Holland, tried in the Court of Common Pleas, at Westminster, on the 12th, 13th, and 14th of February last, to be INVALID.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

MOREWOOD and ROGER'S PATENT METAL.—This article was at first sold under the name of Galvanised Tin Plates, but the patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby sustained injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers, in future. They, therefore, respectfully request purchasers to inquire for Morewood and Roger's Patent Metal. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanised Iron has a plain zinc-like appearance, while M. and R.'s Patent Metal has a smooth crystalline surface.

MOREWOOD AND ROGER'S PATENT METAL,

Patronised by the Admiralty and the Honourable Board of Ordnance, being extensively used in her Majesty's Dockyards, at the Tower, the extensive new fire proof warehouses of the Liverpool Docks, and elsewhere, for every variety of roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience, that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc—viz., its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is, therefore, obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c., &c.

For full particulars apply to S. Holland, 34, Gracechurch-street.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cooksair-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1843. Silver lever watches, jewelled in four holes, 2 gs. each; in gold cases, £3 to £10 extra. Gold horizontal watches, with gold dials, from 6 gs. to 12 guineas.

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use, 1s. each, but to customers gratis.

RECENT AMERICAN PATENTS.

IMPROVED PROCESS OF CONVERTING IRON TO STEEL.—S. Broadmeadow, New York.—The patentee says—"My improvement consists in the using of a permanent roof of fire stone, or fire brick, in place of the temporary covering heretofore employed. I also use a sliding shutter, which is placed in front of the furnace, so that it may be brought down as required. My improvement in the manufacturing of the steel, after the process of cementation has been completed, consists in the taking of the bars first from the upper part of the convertory, whilst they are at the highest temperature to which they are to be brought, and subjecting them immediately to the action of tilting, or of rolling, without the necessity of reheating. To do this, a part of the upper layer of bricks, which inclose the converting oven, is first removed, so as to enable one to draw out the upper bars, and as the bars are successively operated upon, the bricks are further removed, until the whole contents of the convertory have been tilted, or rolled. As this process goes on, the sliding shutter is brought down, so as to inclose the part from which the bricks have been removed. By this procedure several advantages are attained in the process of manufacturing steel. Under that hitherto followed, the whole charge has been allowed to cool down before removing the steel from the convertory, and this necessarily resulted in great loss of time; the bars, after being removed, had to be reheated, in order to their being tilted, or rolled: by this reheating time was consumed, and the steel actually injured, it being a well-established fact, that every time steel is highly heated it is deteriorated. *Claim.*—What I claim as new, is the improvement herein described, of taking the steel from the oven in its heated state, and subjecting it to the action of rollers, or of the tilt hammer, without the necessity of reheating the bars, by which improvement said manufacture is greatly facilitated, and the quality of the steel much improved."

Mr. Broadmeadow has also obtained a patent for a process for obtaining MALLEABLE IRON DIRECTLY FROM THE ORE, by treating the same in a puddling-furnace, of which the following is the *claim*:—"What I claim as new, is the effecting of such reduction (the reduction of the ore into malleable iron) by mixing, in due proportion, the ores known as oxides, and as carburets of iron (without the necessary admixture of fluxes, or carbonaceous matter), and exposing them to a proper temperature, for fusing the same, in a furnace, so constructed that the flame shall not reverberate upon the mass, but shall pass over it in contact, or nearly in contact, therewith."

[*To be continued in next week's Mining Journal.*]

MEXICAN COMPANY.

A meeting of the proprietors of this company was held on Thursday last, at the offices, 32, Great Winchester-street, there being a very full attendance of members, evincing the deepest anxiety in the report, which, it had been understood, would be of unusual importance.—J. O. HANSON, Esq., on taking the chair, called on Mr. MAUDE (the secretary) to read the notice advertising the meeting, which having been done, the SECRETARY read the following report:—

REPORT.

In meeting the proprietors on the present occasion, the directors have sincere pleasure in congratulating them on the favourable result of last year's operations at their establishment in Oaxaca, and the still more favourable prospects for this year, which are held out to them by their agent, Mr. Fenochio, in the following extracts from his letter to the directors, dated 15th February last, transmitting the accounts of the negotiation of Yaveia for the last year:—

"I have now the pleasure of waiting on the directors with the remaining accounts, to the close of 1844, including profit and loss account, and balance-sheet for that year—showing a profit of $11,483 5¼ (equal to 2296*l.* 14s. 6d.), after crediting the directors $2500, or 500*l.* sterling, for the company's expenses in England for the year 1844. This enables me, with $1405 5 of the former year's balance, to remit by this opportunity a bill, drawn by Messrs. John Sadler and Co. on Messrs. Jones, Loyd, and Co., at sixty days' sight, for 1162*l.* 13s. 10d., which, with the proceeds of the $9000 transmitted to the directors in September last, 1837*l.* 6s. 2d.—makes the total amount remitted on account of last year's operations, 3000*l.*, which, I trust, will enable the directors to declare a dividend of 10s. per share at the annual meeting of proprietors in May next. Had political events not disturbed our operations, the profits of 1844 would, in all probability, have been nearly $20,000. I state this, because the Ixtepexi district can hardly be said to have had a fair trial during the harsh proceedings of the public authorities, who, not content with seizing our workmen, and forcing them to become soldiers, have, in several other respects, been a source of great annoyance to us. However, tranquility being now, in some measure, restored, we may hope to advance in our works at Ixtepexi with more utility to the company."—"In purchases of ores we continue to do well, but the concentration of halvans offering little or no prospect of success, I have thought proper to suspend this process for the present, and to place the hacienda of Socorro under amparo. The company possesses a good stock of the most necessary stores to supply active work for the next two years. On the whole, I can foresee no reason to doubt the well-doing of the company—the problem having at length been solved, and the concern made to render a profit; and, although this can ill bear a comparison with the sums advanced by the proprietors, still, one important fact ought not to be overlooked—namely, that, not long since, all was considered as lost, whereas a profit has now actually been realised for the proprietors."

With reference to that part of Mr. Fenochio's letter, in which he reports the balance of last year's profit and loss account at $11,483 5¼, it is necessary to remark, that, at the date of this account, he had not received the director's sanction to the increase of his last year's salary and allowance on profits, which was conceded to him by the board's letter, dated 30th November last, which did not reach him until the month of January. In the journal-sheet of which month, it appears to the debit of general charges on *this* year's operations, in the sum of $1824 1¾, although strictly appertaining to those of the *past* year. Deducting this amount, therefore, from the balance of last year's account of profit and loss, $11,483 5 4, as stated by Mr. Fenochio, and borne out by the account itself, leaves only $9659 4 as the actual profit on last year's operations, which, at 4s. per dollar, gives the balance applicable to a dividend of 1931*l.* 18s.—equal to 7s. 8d. per share.

In announcing a dividend, therefore, of 7s. 6d. per share on the 5051 shares now existing, which will require the sum of 1894*l.* 2s. 6d., the directors feel confident that it will meet with the entire concurrence of the proprietors, as it would have been impossible to have divided more, without encroaching on the capital of the company, which it can neither be the wish, or the policy, of the proprietors to resort to. The directors, therefore, now declare a dividend out of the profits of the past year's operations of the company, of 7s. 6d. per share, clear of the income tax, on the 5051 shares, now existing in the books of the company, which will be payable at this office, from ten to four o'clock, on and after the 15th of May instant. Mr. Fenochio, in the extracts from his letter of 15th February, before alluded to, having expressed a wish that the directors might be enabled out of the 3000*l.*, which he had remitted home to them, to pay a dividend of 10s. per share, appears not sufficiently to have adverted to the fact of the additional burthen thrown on last year's operations by the increase to his salary, and by the disbursements here for stores sent out to him, and other payments on account of the negociation, which ought to have been provided for out of the remittances made by him to the directors; which sufficiently accounts for the difference between his anticipated dividend and that announced by the directors. Adverting to this increase to Mr. Fenochio's salary, the directors deem it proper to explain that they have been induced to acquiesce in it, after several applications on his part, from the fact of his having borne, singly, for several years past, the whole of the duties of the establishment (by which a great saving has accrued to the company), under the assurance, on the part of the directors, that whenever the profits of the concern admitted of it, he should be adequately remunerated for the zeal, integrity, and talent, with which, during a long series of years, he has administered the affairs of the company, to which the directors readily admit, that the improvement in the prospects, and recent success, of the company, are mainly attributable. The directors, however, deem it proper to add, that, though this increase makes up Mr. Fenochio's salary to 600*l.* per annum, he is not satisfied with his present scale of remuneration, but requires a still further increase to it for the present year, which, being a matter altogether within the province of the directors to decide upon, the proprietors will, no doubt, be satisfied to leave it entirely in their hands.

The directors now submit the balance-sheet of the Oaxaca ledger for the past year, the balance of which, transferred to stock account, amounts to $135 *m.*, which is an increase of about $15 *m.* on the balance of 1843, as submitted to the proprietors at the last year's meeting, arising from the profits of last year, and an increase of about $3 *m.* in the value of stores on hand on the 31st December last, received during the year from hence and from Vera Cruz, at a cost of that amount, which, as stated in Mr. Fenochio's letter, before referred to, makes him quite easy on the score of being provided with a stock of the most useful stores for two years to come. On the whole, therefore, the directors feel warranted in congratulating themselves and the proprietors on the result of last year's operations, and on the prospects, for the reasons before explained, of a still more favourable result to those of the present year.

In compliance with the provisions of the Deed of Constitution, the directors now submit the balance-sheet of the company's accounts, from its commencement to the 31st of December last, examined, and attested as correct, by the auditors; and have to report that two of the directors—viz., Thomas Wilson, Esq., and Thomas Alexander Mitchell, Esq., M.P., and one of the auditors, William Walmesley Terrington, Esq., are now in turn, by settled rotation, to go out of office; but, being eligible, now offer themselves for re-election to the offices of director and auditor respectively. They have further to report, that William Burnie, Esq., having disqualified as a director of the company, a vacancy in the direction is thereby occasioned, for which office George Lewis Hollingsworth, Esq., having given the requisite notice, now offers himself as a candidate.

The Mexican Company, from its commencement in March, 1825, to Dec. 31, 1844.

Dr. RECEIPTS.				Cr.
Capital: For the amount received for deposits and calls to 31st December, 1843, as per statement submitted to the proprietors at the annual meeting held on the 2d of May, 1844				£392,410 0 0
Profit and loss balance on the 31st of December, 1844, consisting of dividends, interest, and profit on sale of stock and Exchequer Bills on the indemnity fund account, discount on prompt payments, and other items				2,174 15 6
Total				£394,584 15 6
DISBURSEMENTS.				
Commissioners in Mexico, for the amount transmitted to them from the commencement of operations in 1825 to 31st Dec., 1843, as per statement submitted to the proprietors at the annual meeting held on 2d May, 1844	£362,430	15	9	
For ditto in 1844, paid on their account for letter of credit and stores sent out	745	15	6	
	£363,176	11	3	
Deduct the amount received from Mr. Pasqual Fenochio on account of this year's profit	1,857	16	2	361,318 15 1
General expenses: For the amount disbursed under this head, for salaries, rent, law charges, taxes, advertisements, &c., from the commencement to 31st December, 1843, as per statement above referred to	28,979	15	0	
Addition to ditto in 1844	502	15	7	29,482 10 7
Trustees' indemnity fund: For 1000*l.* Consols, valued at 95 per cent.	950	0	0	
For 1000*l.* Exchequer Bills, with premium and interest to this date, valued at	1,050	0	0	2,000 0 0
Cash on hand—viz., Masterman, Peters, and Co.	522	3	2	
" Bank of England	62	10	7	
" Petty cash	23	16	1	608 9 10
Furniture and fixtures in the office valued at				100 0 0
Stamps, for transfers on hand				27 10 0
Exchequer Bill account				1,047 10 0
Total				£394,584 15 6

The CHAIRMAN observed, that the result of the past years' operations, as stated in the report, was considered by the directors, not only highly satisfactory in itself, but an earnest of the future prosperity of the company; and he trusted that the proprietors would agree with them, in the propriety of declaring the dividend, which they had recommended in the report. That the present satisfactory account was not merely a temporary success, but a well-grounded prospect of permanent prosperity, was little doubted by the board of directors, and this opinion was confirmed by the unhesitating expression of confidence on the part of their agent in Mexico, Mr. Fenochio. After paying all expenses for the last year, the company had now 500*l.* in hand, after providing for this year's expenses *here*, and 2000*l.* more in the indemnity fund, whilst, to add to their prospects, Mr. Fenochio had made provision for all requirements, as regards stores, &c., for two years to come.

The report having been unanimously received and adopted, the meeting, in accordance with its recommendations, re-elected Thomas Wilson and Thomas Alexander Mitchell, M.P., Esqrs., the outgoing directors, as directors for the ensuing year, and William Walmesley Terrington, Esq., as auditor; George Lewis Hollingsworth, Esq., was elected a director in the room of Mr. William Burnie, disqualified.—A vote of thanks was passed to Mr. Fenochio, for the services he had rendered the company on their property at Mexico, the chairman and board of directors, and the secretary; when the meeting separated.

MINERS' SHOVELS.—Mr. W. Brunton, jun., of Poole, engineer, has taken out a patent for a new miners' shovel, the novelty of which consists in the materials of which it is composed, and not from any peculiarity in the make. He uses an alloy of three parts copper, two zinc, and one tin, which, when in a fluid state, is to be poured into a mould of sand of the form required; after being taken from the mould, it is to be slightly hammered on a smooth anvil to give it consolidation. If required to be peculiarly hard and tough, he uses eight parts copper to one tin, but without zinc; there must be a great difference in price between these and iron shovels, but they will, no doubt, last a proportionately longer time, and perform the work more efficiently.

NISTER DALE IRON COMPANY.

In its last regulation of the commercial tariff, the Zolverein imposed a series of enormously high protective duties (in many cases amounting to absolute prohibition), on every description of foreign iron imported into the German States, yet, in spite of these duties, and the heavy cost of transport, the increasing demand has compelled the importation of large quantities of all kinds of iron from England and other places. The opportunities thus thrown open for the more extensive development of the iron manufacture in Germany, induced a number of influential gentlemen, connected with the iron trade in both countries, to unite in the formation of the above company for the purpose of working some extensive and valuable mines of iron ore and coal, situated in the valley of the Nister, near Hachenburg, in the Duchy of Nassau. The quality of some of these ores are equal to those of Sweden, and can be converted into pig-iron of the first quality. Works and buildings, for the manufacture of railway, bar, sheet, and every description of iron, have been erected. Blast furnaces are about being erected, but the puddling forge and rolling mills being ready, it is intended to meet the extensive demand to supply them for the present from the neighbouring furnaces, in addition to which supply of pig-iron, the disproportionate duty between cast and wrought-iron will leave a fair profit on conversion.

The very great advantages which this company must evidently possess, in its valuable ores, extensive works and properties, facility of obtaining labour at a low cost, and the great and increasing demand for their produce, holds out the cheering prospect to the shareholders, that the various kinds of iron can be manufactured at a cost not exceeding that in any other country; and, from the most careful estimates, it is confidently anticipated that a profit of 10 per cent. will be returned immediately on the capital at present subscribed, and that, on the completion of the smelting furnaces, an entire profit of fifteen per cent. will be made. The works, upon the completion of the Cologne and Weisbaden Railway, will be within easy access of the Berlin, Rhenish, Dutch, and Belgian lines of railway, as also with those of Wiestaden, Basle, Frankfort, and Strasbourg: thus, in addition to the numerous native markets already in existence, giving the greatest facilities for opening new ones throughout the continent. This company being recognised by the Government as a *Société Anonyme*, the shareholders are only liable to the amount of their shares, and, under all circumstances, it appears to hold out every prospect of an immediate, permanent, and ample remuneration for the capital invested.

ARIGNA IRON COMPANY.—Dr. Kane, in his excellent work on the *Industrial Resources of Ireland*, from which we gave copious extracts, in former numbers of the Journal, among a large mass of valuable information on the mining resources of the country, has noticed at length the particularly valuable iron ores of the Arigna district. Perhaps there is no part of this valuable work which displays more patient research, or more accurate estimate, than those chapters relating to the important manufacture of iron. The correct data given, and the sound reasoning from the facts introduced, which pervade that portion of the work, have already began to make an impression where it will be likely to have an effect on the industry of the country; and we are happy in being informed, that a body of capitalists have formed a company, for the purpose of working these valuable but hitherto unfortunately notorious mines, and that this determination has been come to from the elaborate and laborious researches of Dr. Kane having more than fully borne out all the highly favourable opinions hitherto entertained on the valuable character of this property, if worked with economy, spirit, and in accordance with true practically scientific knowledge. Mr. Latouche's interest in the Royalties have already been purchased, as well as all outstanding claims, and we hope shortly to have to announce the relighting of the furnaces, and, by the full development of its great resources, the constant employment of a large number of hands. The iron ore in the neighbourhood of the river Arigna, is from the iron district called Slieve Neeran, or the iron mountain. Resting on the limestone occurs a great bed of clay slate, 600 feet in thickness, containing numerous beds of iron stone, from half an inch to two feet in thickness—the most important occur from 200 to 300 feet above the limestone, and contain some ore as rich as in any part of the world—the usual form is that of nodules, from the size of an egg to a bull's head, but is also found in strata or sheets of considerable length. From the disintegration of the clay slate, the nodules roll down the mountain, and are deposited in incredible quanties on the margins and in the beds of the streams, from whence they are collected and brought to the works for use. In quantity this ironstone is inexhaustible, and the quality has been correctly ascertained by Dr. Kane, who found the richest Arigna ore to contain 42·3 per cent. of metallic iron, clay ironstone nodules 40 per cent. of iron, specimens from the stratified ore 38·8 per cent.; while of the Staffordshire ores, the blue flat gives 28 per cent., and the gubbin 40·5 per cent., two kinds of Welsh ore, respectively 31·4 and 42·1 per cent., and Mushet's black band 41 per cent. of metallic iron. It is thus clear, that, on the average, the Arigna ores are equal to any in Britain and Wales, while some portion contain riches only equalled by the blackband of Glasgow. We hail the re-establishment of this company as a source of much hope for the mining interests of Ireland, and shall record the progress of the works with the greatest satisfaction.

CWMORTHIN SLATE COMPANY.—The well-known quarries of Cwmorthin 25 miles from Carnarvon, and 13 from Portmadoc, are a continuation of the same slate formation which has so long been celebrated for its valuable and extensive productions in Merionethshire; and, under judicious management, may, no doubt, be rendered as extensive and lucrative as any works in the principality. There is but little, if any, doubt of the valuable nature of this quarry, it having been fully proved by actual working to some extent; the slate is found to be of a very superior description, and greatly improving in quality as the veins are worked in depth. In addition to the mineral wealth on this property, there are 200 acres of land, admirably adapted for the general purposes of the works, and there is sufficient water power for working the requisite machinery for sawing and planing slate. A company has been formed, with a capital of 100,000*l.*, for developing the resources of this property, and by proper clearing and further extending the works, it is estimated that the quarry will produce 10,000 tons of slate per annum, and that a profit of 15 per cent. may be safely calculated upon, which, from the improving nature of the slate in depth, may be expected gradually, but continually and permanently, to increase. The terms on which the property is held are highly advantageous, while, from the agreements entered into, the fee simple can be purchased at a future time—thus enabling the company to work the slate without royalty charges or other interference; this latter circumstance is, in itself, a feature of considerable importance in works of this nature, and the formation of this company seems, under all circumstances, to hold out legitimate inducement for investment, with a fair prospect of ample return for the capital expended.

METALS AND METALLIC PROPERTIES.—On Saturday last, Professor Faraday continued his series of lectures on Metals and Metallic Properties, the subject for that day being more especially the consideration of tin; but the lecturer adverted also at length to the combustibility and affinity for fire which the metals generally possessed. The peculiar properties of tin-foil were ably dilated on by the learned professor, and their applicability as a reflecting medium as adapted for mirrors, illustrated by numerous experiments. Several quantities were melted, and the efficacy of the process very beautifully established. The value of tin, as an article for dyeing, was clearly explained and demonstrated by a series of experiments, in connection with cochineal, ammonia, and water; where, in each instance, the metal proved its greater or less affinity for another, by combining with it, and gradually sinking to the bottom of the vessel in which the chemical admixture was placed. The combustibility of the metals was illustrated by submitting in succession to a sufficient heat, antimony, iron, tin, and other metals—their ready combustion, emitting sparks, and retaining heat, the high state of oxydation in which the particles remaining after combustion were found, especially antimony, clearly evincing their great affinity for oxygen. As an amalgam with copper, the formation of bronze was obtained—a compound capable of receiving the finest edge, and of being ground to the finest point. To illustrate this and its extreme durability, the lecturer exhibited some helmets found at Olympia in the Peloponnesus, an arrow pointed with bronze, and several other most beautiful specimens of ancient intelligence and artistic skill, especially a very perfect beak recovered from the bottom of the sea at Actium, and consequently, without doubt, forming the figure head of one of the vessels engaged at the celebrated battle there. This was in a beautiful state of preservation, and, together with the helmets, and some curious medals, elicited the admiration of the audience. The learned professor, in the course of his lecture, illustrated also the superiority of iron over bronze guns, and stated, that at the siege of St. Sebastian, 300 rounds were fired from the British iron cannon, while not 100 could be discharged from those of the French, in consequence of, when heated, their extreme liability to explode; although, when cold, they would sustain a far greater shock than those constructed of iron. Mr. Faraday concluded a most interesting lecture, by producing a drawing, elucidatory of the manner in which the French bronze guns burst around the touch-holes, and were thus rendered useless, even prior to their danger of explosion.

BIDEFORD AND TAVISTOCK RAILWAY—

COMMENCING AT THE TOWN AND PORT OF BIDEFORD,

Passing through or near the towns of Torrington, Hatherleigh, and Okehampton, and

JOINING THE BRANCH OF THE SOUTH DEVON RAILWAY,

which is to be made from Plymouth to Tavistock—thus effecting a direct communication through the county of Devon from north to south.

Length Forty-two Miles.

Capital £360,000, in 14,400 shares, of £25 each.—Deposit £1 7s. 6d. per share.

(Provisionally Registered.)

ENGINEERS.

Messrs. Rice and Thomas Hopkins, Members of the Institution of Civil Engineers.

SOLICITOR—Hull Terrell, Esq., 39, Basinghall-street, London.

LOCAL AGENTS—Messrs. Burd and Son, Okehampton; James Hooker, Esq., Bideford.

BANKERS.

Messrs. Rogers, Olding, and Co., Clement's-lane, London.

London and Westminster Bank, London.

The preliminary surveys and estimates have been made. The prospectus, with a list of the names of the local patrons and committee of management, will be published in a few days, and may be obtained from the solicitor, to whom applications for shares may be addressed.

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FORM OF APPLICATION.

To the Committee of Management of the Bideford and Tavistock Railway.

Gentlemen,—I request that you will allot me shares in the above company, and I hereby undertake to accept the same, or such less number as may be allotted to me, and pay the deposit thereon, and also to execute the Parliamentary contract and subscriber's agreement, when called upon so to do.—Dated this day of 1845.

Name in full .....
Residence .....
Trade or profession .....
Reference .....

GRAND UNION RAILWAY—COMMENCING AT

NOTTINGHAM, and extending *via* GRANTHAM, FOLKINGHAM, SPALDING, HOLBEACH, LONG SUTTON, AND SUTTON-BRIDGE,

TO KING'S LYNN IN NORFOLK.

Provisionally Registered, pursuant to 7 and 8 Victoria, cap. 110.

Capital £1,500,000, in 60,000 shares, of £25 each.—Deposit £1 10s. per share.

COMMITTEE OF DIRECTION.

THE RIGHT WORSHIPFUL THE MAYOR OF NOTTINGHAM.

William Gibson, Esq.	Jonathan Burton, Esq.
Frederick Plant, Esq.	Henry Smyth, Esq.

Mr. Thomas Gee.

PROVISIONAL COMMITTEE.

The Mayor of Nottingham	F. P. Hewitt, Esq. Nottingham
R. S. Hutchinson, Esq. M.D., Nottingham	Thomas Adams, Esq. Lenton Firs
Edward Munk, Esq. Nottingham Park	William Patterson, Esq. Bulcote
William Gibson, Esq. Nottingham	Richard Biddle, Esq. Nottingham
Frederick Plant, Esq. Nottingham	William Chapman, Esq. Nottingham
Thomas Wakefield, Esq., Nottingham	John Gibson, Esq. Nottingham Park
Henry Smyth, Esq. Nottingham	Robert Attenborough, Esq. Nottingham
Thomas Keely, Esq. Nottingham	Richard Birkin, Esq. Basford
William Cartledge, Esq. Nottingham	Isaiah Danks, Esq. Nottingham
John Morley, Esq. Nottingham	John Leavers, Esq. Nottingham
William Gill, Esq. M.D., Nottingham	C. N. Wright, Esq. Nottingham
Jonathan Burton, Esq. Carrington	Edward Steegman, Esq. Nottingham
Louis Heymann, Esq. Nottingham	W. E. Laycock, Esq. Sheffield
Samuel Cartledge, Esq. Nottingham	James Morley, Esq. Stanton Hall
William Page, Esq. Nottingham	William Taylor, Esq. Nottingham

Fras. Wakefield, jun. Esq. Nottingham Park

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BANKERS.

London—Sir R. C. Glyn and Co.

Nottingham—Moore and Robinson's Nottinghamshire Banking Company.

SOLICITORS.

Messrs. W. and S. Parsons, jun., Nottingham.

PROSPECTUS.

This important line of railway will commence near the Midland Counties station at Nottingham, whence, after crossing the navigable River Trent, the line will proceed through or near Bridgeford, Holme, Ratcliffe, and the intermediate villages, Bingham, Bottesford, Whatton, Elton, the rich and fertile Vale of Belvoir, to the town of Grantham, thence passing through or near Folkingham and Bourn, or one of them, to Spalding, Long Sutton, Sutton-bridge, and King's Lynn, and there joining the intended Lynn and East Dereham Railway, will form the most direct line of connection between the eastern counties, and the great and populous manufacturing districts of Lancashire, Yorkshire, and Staffordshire, by means of the projected Grand Union Extension Line to Amber Gate, and other lines north of Nottingham; and by means of the line to Yarmouth will also form a communication between the eastern and western coasts of the kingdom.

The southern parts of Lincolnshire, and the north-eastern parts of Cambridgeshire, will be afforded a direct facility of intercourse with some of the best markets in England.

The neighbourhood of Nottingham being the most eastern part of the great midland coal-field, this line will afford a supply of coals, as well as being the medium of transit of Derbyshire lime and stone to the agriculturists of South Lincolnshire, at a considerably cheaper rate than by any other existing or projected line; in short, the vast mineral wealth of the midland district, will be rendered available to the whole of the great agricultural country east of Nottingham.

Surveys are now in progress, and the nature of the country is known to offer no serious engineering difficulties, and a great portion of the line will be nearly a dead level. The consideration of an extension of the line from Spalding or Long Sutton to Wisbeach, will also form a portion of the scheme.

The Report of the Board of Trade on the lines through Lincolnshire says—"The total cost attending the transmission of a quarter of wheat from the interior of Lincolnshire, by sea, from the port of Boston to London, including freight, insurance, lighterage, commission, and other charges, is stated to amount to very near 8s. The charge by railway per quarter (allowing five quarters to the ton, at the charge of 1½d. per ton per mile, at which the estimate of the Cambridge and Lincoln Railway is taken) would not exceed 2s., and the remaining charges are calculated not to exceed 2s. 6d., thus showing a benefit to the corn growers and to the public of 3s. 6d. per quarter, occasioned by the saving of the sums now paid for insurance, delay, loss in weight, depreciation of quality, lighterage, &c."

"A still more important advantage to the farmer is afforded by the opportunity given by railway communications of availing himself promptly of the most favourable market. It frequently happens, that owing to the delay and difficulty of transmission, the farmer is compelled to sell his wheat at the nearest provincial market at a price considerably below the average rate, and to lose the advantage of a temporary rise."

"Whatever tends to equalise prices and to prevent excessive fluctuations, cannot but be considered as a benefit both to the producer and the consumer. We are satisfied that much may be done in this way by an economical and well arranged system of railway communication."

The same remarks apply to the whole of the great manufacturing districts of Lancashire, Yorkshire, and Staffordshire.

The great quantity of land, amounting to 100,000 acres, about to be redeemed from the sea by a company, with Sir John Rennie as engineer for the promoters, and Mr. Rendell for the corporation of Lynn, must ultimately prove of great advantage to this undertaking. And it is conceived, that the Grand Union Railway must meet with the cordial co-operation of the midland railways, as an immense traffic will be brought along those lines *en route* to Birmingham, the Potteries, and the whole of the manufacturing districts of Staffordshire. The traffic upon the intended Nottingham and Mansfield, Sheffield and Newark, Manchester, Sheffield, and Midland Junction, and the Sheffield and Manchester lines must also derive a great increase of traffic from this line of railway. The Cambridge and Lincoln Railway must also be greatly benefitted.

Power is intended to be reserved in the Act to allow 4 per cent. interest upon deposits and calls, until completion of the line.

Applications for shares may be made to Messrs. Capes and Stuart, solicitors, Gray's inn, London; or Messrs. W. and S. Parsons, jun., solicitors, Nottingham, where the forms of application may be obtained; or from Mr. Charles Spencer, Mr. Pearson Peet, Mr. Samuel Collinson, sharebrokers, Nottingham; or Mr. Charles Cancellor, stock and sharebroker, 1, Cushion-court, Broad-street, London; Mr. R. S. Wilkinson, 8, St. Mildred's-court, London; Mr. William Haynes, sharebroker, Manchester; Messrs. Edward King and Co., Leeds; Messrs. Potter and Smith, Leeds; Messrs. Collinson and Flint, Hull; Messrs. Parsons and Townley, Liverpool; Messrs. Warburton and Co., Newcastle-upon-Tyne; Mr. J. Senior, Sheffield; or Mr. Andrew Moffatt, 21, George-street, Edinburgh.

GRAND UNION EXTENSION RAILWAY,

COMMENCING AT NOTTINGHAM,

AND EXTENDING VIA

Lenton, Radford, Wollaton, Bulwell, Nuthall, Kimberley, Watnall, Greasley, Newthorpe, Eastwood, Beauvelee, Brunsley, Selstone, Codnor, Butterley, Pentridge, Ripley, Heage, & Hartsay,

TO AMBER GATE.

Provisionally Registered, pursuant to 7 and 8 Vic., cap. 110.

Capital £500,000, in 20,000 shares, of £25 each.—Deposit £1 10s. per share.

PROVISIONAL COMMITTEE.

Edward Munk, Esq. Nottingham Park	Thomas Adams, Esq. Lenton Firs
R. S. Hutchinson, Esq. M.D., Nottingham	William Patterson, Esq. Bulcote
William Gibson, Esq. Nottingham	Richard Biddle, Esq. Nottingham
Frederick Plant, Esq. Nottingham	William Chapman, Esq. Nottingham
Henry Smyth, Esq. Nottingham	John Gibson, Esq. Nottingham Park
Thomas Keely, Esq. Nottingham	Robert Attenborough, Esq. Nottingham
William Cartledge, Esq. Nottingham	Richard Birkin, Esq. Basford
John Morley, Esq. Nottingham	Isaiah Danks, Esq. Nottingham
William Gill, Esq. M.D., Nottingham	John Leavers, Esq. Nottingham
Jonathan Burton, Esq. Carrington	C. N. Wright, Esq. Nottingham
Louis Heymann, Esq. Nottingham	Edward Steegman, Esq. Nottingham
Samuel Cartledge, Esq. Nottingham	W. E. Laycock, Esq. Sheffield
William Page, Esq. Nottingham	James Morley, Esq. Nottingham
F. P. Hewitt, Esq. Nottingham	William Taylor, Esq. Nottingham

BANKERS.

London—Sir R. C. Glyn and Co.

Nottingham—Moore and Robinson's Nottinghamshire Banking Company.

SOLICITORS.

Messrs. W. and S. Parsons, jun., Nottingham.

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PROSPECTUS.

An EXTENSION of the GRAND UNION RAILWAY is determined upon, from Nottingham to the Terminus of the intended MANCHESTER AND BUXTON RAILWAY, at Amber Gate.

The line will traverse the Great Derbyshire and Nottinghamshire coal-field, running from the town of Nottingham, through or near Lenton, Radford, Basford, Wollaton, Bulwell, Nuthall, Kimberley, Watnall, Greasley, Newthorpe, Eastwood, Beaverlee, Brinsley, Selstone, Codnor, Butterley, Pentridge, Ripley, Heage, Hartsay, to Amber Gate, and thus passing through a densely-populated district, inexhaustible in its mineral resources, and from whence an immense degree of local traffic must be derived; it will complete, by its junction with the Grand Union and the Manchester and Buxton lines, a direct communication between the eastern and north-western parts of the kingdom.

As this line was originally a part of the plan contemplated by the promoters of the Grand Union Railway, and was merely postponed until it should be ascertained that the Manchester and Buxton Company would carry out their scheme of extension to Amber Gate, the shares will be apportioned to the holders of Grand Union shares in the proportion of one to every three.—April 30, 1845.

NORTH BRITISH RAILWAY.—Notice is hereby given,

that the INTEREST PAYABLE on this COMPANY'S STOCK will become DUE, and will be PAID at the offices of the company's bankers, on the 15th May next, on presentation of the circulars and receipts, which will be forwarded to the registered shareholders.—The Transfer Books will be closed from the 1st to the 15th May inclusive.

By order of the directors, JOHN LEARMONTH, Chairman.
Edinburgh, April 16, 1845. CHAS. F. DAVIDSON, Secretary.

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REGISTERED PROVISIONALLY.

GREAT WESTERN AND WYCOMBE JUNCTION RAILWAY.

Capital £150,000, in 10,000 shares, of £15 each—Deposit £1 per share.

DIRECTORS.

James Alston, Esq. Director of the South Wales and West Cornwall Railways
Frederick Ricketts, Esq. } Directors of the Great Western Railway
Frederick Pratt Barlow, Esq. }
Archibald Frederick Paull, Esq. Director of the Waterford and Kilkenny, and Cork and Waterford Railways
George Emery, Esq. Director of the South Wales Railway
George Ashlin, Esq. 50, Mark-lane
Robert Lindsell, Esq. Biggleswade
John Neale, Esq. Castle Hill, High Wycombe
Francis Parker, Esq. Manchester, Director of the Bristol and Exeter Railway
William Rose, jun. Esq. High Wycombe
Charles Venables, Esq. High Wycombe
Robert Wheeler, Esq. High Wycombe

BANKERS.

Messrs. Denison, Heywood, Kennards, and Co. Lombard-street
Messrs. Wheeler and Sons, High Wycombe

ENGINEER—Joseph Gibbs, Esq. 7, Palace-yard.

SOLICITORS.

Messrs. Barker, Rose, and Norton, 50, Mark-lane, and 31, Parliament-street, Westminster.
Messrs. Edwards, Mason, and Edwards, Gray's Inn, and 8, Delahay-street, Westminster.

COUNTRY AGENTS.

John Parker, Esq. High Wycombe; W. L. Ward, Esq. Great Marlow.

SECRETARY, pro tem.—Mr. W. H. Wilson.

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This railway is projected for the purpose of affording to the town of High Wycombe, and a large population in South Buckinghamshire, the important advantages of railway communication with the metropolis and other parts of the kingdom.

The town is situate on the high road from London to Oxford and Cheltenham, and is the market for an extensive agricultural district, the produce of which has long contributed to the supply of the metropolis. It has numerous flour and paper-mills in its immediate neighbourhood. There is also a considerable traffic passing through Wycombe, which would be intercepted by the proposed railway. The line will be nine miles in length; it will diverge from the Great Western Railway at Maidenhead, twenty-three miles from London, and passing along the rich valley of Woburn and Loudwater, will terminate in the town of High Wycombe.

It will directly facilitate communication between London and the following places:—High Wycombe, West Wycombe, Stokenchurch, Radnage, Bledlow, and Bledlow Ridge, Princes Risborough, Saunderton, Bradenham, Hitchendon, Great Hampden, Amersham, Great and Little Missenden, Penn, Chalfont St. Peter, Chalfont St. Giles, Beaconsfield, Woburn, Cookham, Loudwater, Great Marlow, Little Marlow, Medmenham, Hambleton, Turville, Fingest, and Ibstone, possessing an aggregate population of more than 42,000; but a district of country containing a population of at least 60,000, would feel the benefits of a reduction in the import of coal, groceries, and other articles of consumption, and of a cheaper and more rapid mode of conveyance for the paper, flour, chair, gun-stock, and stave-tub manufactures, and the fat stock and agricultural produce of the district in return. Many situations of great attraction, as country residences, would also be brought within an hour's journey of the metropolis.

In the article of coal alone a large traffic may be expected. It has been satisfactorily established that the ratio of consumption of coal in proportion to the population of a rural district is equal to one ton per head per annum. The present price to the consumer at Wycombe is 42s. per ton; but, by the proposed railway, the best seaborne as well as Welsh and other inland coal could be delivered at a greatly reduced charge.

From the preliminary examination of the country it is ascertained that the line will be constructed with easy gradients, and at a small expense, whilst the traffic is estimated to afford an ample return upon the capital. The committee reserve the right to enter into an engagement to lease the line when completed to the Great Western Railway Company, or to make such other arrangements with them as may appear desirable. Power will be taken in the Act to allow interest at the rate of 4*l.* per cent. upon the deposit and calls, until the opening of the line. No further call will be made, until after the Act of Parliament is obtained.

Prospectuses and plans, with forms of application for shares, may be obtained of the solicitors; of J. W. Scott, Esq., 3, Bartholemew-lane, or of Messrs. Aston and Scott, stock and sharebrokers, 11, Throgmorton-street.—April 29, 1845.

FORM OF APPLICATION.

To the Directors of the Great Western and Wycombe Junction Railway.

Gentlemen,—I request that you will allot to me shares in the "Great Western and Wycombe Junction Railway," on the terms and conditions of the prospectus; and I undertake to pay the deposits thereon, or upon so many as may be allotted me, and to sign the Parliamentary contract and subscribers' agreement when required.

Dated this day of 1845.

Name.....
Residence.....
Trade or profession.....
Reference .....

GREAT MEDITERRANEAN AND ADRIATIC

JUNCTION RAILWAY,

CONNECTING THE CITIES OF

GENOA, TURIN, MILAN, AND VENICE;

AND COMPLETING THE COMMUNICATION BETWEEN THE

MEDITERRANEAN SEA AND THE GULF OF VENICE.

Capital, 30,000,000 Florins Convention—equal to £3,000,000 Sterling;

In 60,000 Shares of 500 Florins—equal to £50 each.

Of which 40,000 will be allotted in England, the remainder being reserved for Continental Distribution.

Deposit—10 Florins Convention, equal to £1 per Share.

PROVISIONAL DIRECTORS.

Henry Arrowsmith, Esq., Bayswater
John Benson, Esq., Park-place Villa, Maida-hill
Miles Dormer, Esq., Ann's-place, Sloane-street
Sir John Hare, Langham-place
William Horatio Harrison, Esq., Cecil-street, Strand
Thomas Twysden Hodges, Esq., Sandgate, Kent, and Clarendon Hotel, Bond-stree
Thomas Reginald Kemp, Esq., Abchurch-lane, Lombard-street
Horace William Méteyard, Esq., Chatham-place, Blackfriars
Major Newcomb, James-street, Buckingham-gate
Andrew Turton Peterson, Esq., Wakefield, Yorkshire, and Guildford-street, Russell-square
Edward Sherman Polkinghorne, Esq., 12, Clement's-lane, Lombard-street
(With power to add to their number.)

SOLICITORS.

Edwin Smith, Esq., Gray's-inn
Messrs. Lewis and Ford, 28, Essex-street, Strand

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BANKERS.

The Union Bank of London, Moorgate-street, Pall-mall, East Argyll-place
Messrs. Rogers, Olding, and Company, Clement's-lane
London and Dublin Bank, Dublin, and its branches.

SECRETARY.—John Rathbone, Esq.

Applications for shares must be addressed to the offices of the company, 4, Coleman-street, London; to the solicitors; or to the following brokers, of whom prospectuses, printed forms, and every information may be obtained:—London, Messrs. Carden and Whitehead, Threadneedle-street; Liverpool, Mr. Thomas Crewdson, Mr. Thomas Forsyth; Manchester, Messrs. Cardwell and Sons; York, Messrs. Grayson and Earle; Huddersfield, Mr. L. Weatherburn; Newcastle, Mr. W. Fordyce; Wakefield, Mr. Thomas Cuttle, Mr. S. H. Armytage; Bradford, Messrs. Hutchinson, and Co.; Blackburn, Mr. Thomas Boardman; Bristol, Messrs. Tate and Nash, Mr. Luke Arnold; Exeter, Messrs. Beaumont and Langworthy; Derby, Mr. Samuel Eyre; Coventry, Mr. J. T. Holland; Edinburgh, Messrs. Thomas Farquharson and Co., Mr. A. Moffatt; Glasgow, Messrs. Duncan and Hutchison; Leeds, Mr. James Jamieson; Hull, Mr. Francis Stamp, Messrs. Alsop and Son; Birmingham, Mr. W. H. Collis.

4, Coleman-street, London, 25th April, 1845.

GREAT MEDITERRANEAN AND ADRIATIC

JUNCTION RAILWAY COMPANY.

Capital 30,000,000 florins convention (or £3,000,000 sterling), in 60,000 shares of £50 each.

Deposit 10 florins convention, or £1 per share.

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The provisional directors having, after mature consideration, and with a view to place the company upon a firmer basis, resolved to increase the amount of deposit to £1 per share.

Notice is hereby given, that all parties who have applied for shares will be required to renew their applications for the same, according to the forms now settled, which may be obtained at the company's office, or from the the solicitors or agents to the company. The very large number of applicants for shares in this company necessarily preclude the provisional directors from communicating by means of letter with each individual, and compels them to adopt the medium of an advertisement. JOHN RATHBONE, Sec.

4, Coleman-street, April 25, 1845.

SOUTH METROPOLITAN PURE WATER COMPANY

REGISTERED PROVISIONALLY.

Applicants for shares and the public are hereby informed, that the provisional committee having considered it desirable to POSTPONE the APPLICATION to PARLIAMENT for a BILL until NEXT SESSION, means are being taken to insure its due prosecution. A new prospectus will shortly be ready for delivery. In the mean time information may be obtained of the solicitors. By order of the committee,

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BIRCH and BRAMAH, 6, Great Winchester-street.
JOHN GALSWORTHY, 19, Ely-place.

NOTICE TO INVENTORS.—OFFICE FOR PATENTS

OF INVENTIONS AND REGISTRATIONS OF DESIGNS, 14, LINCOLN'S INN-FIELDS.—The printed INSTRUCTIONS gratis, and every information upon the object of PROTECTION for INVENTIONS, either by Letters Patent or the Designs Act, may be had by applying personally, or by letter, pre-paid, to Mr. Alexander Prince, at the office, 14, Lincoln's Inn-Fields.

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ROYAL ADELAIDE GALLERY, LOWTHER ARCADE,

STRAND.—This popular place of scientific amusement having passed into fresh hands, is now closed for alteration and repair, but will be RE-OPENED on Monday, May 5, with (among other novelties) a WORKING MODEL of PILBROW'S ATMOSPHERIC RAILWAY, 100 feet long, and capable of conveying grown-up persons; also a Model of Phillips's Inundator (shown in action), for throwing a great body of water in cases of fire; the magnificent Pyrieditrope (twenty feet in diameter); popular lectures in science, the gas microscope, dissolving views, &c., daily. Admission, One Shilling; Schools, Half-price.

ONE GUINEA WELLINGTON BOOTS, MADE TO

MEASURE, by G. GARRETT, BOOTMAKER, by special appointment, to the KING OF THE BELGIANS.—A STOCK of the most FASHIONABLE and HIGHLY-FINISHED BOOTS, of *all kinds*, kept ready made, to suit the convenience of Noblemen, Officers of the United Services, and Gentlemen, who prefer trying on boots previous to purchasing, or giving an order.—G. GARRETT, ARMY BOOTMAKER, 130, JERMYN-STREET, and LEICESTER-SQUARE.

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REVIEWS.

The Geologist's Text Book, chiefly intended as a Book of Reference for the Geological Student. By D. T. ANSTED, M.A., F.R.S. J. Van Voorst, Paternoster-row.

Mr. Ansted has already appeared before the public as an author in the interesting and improving science of geology, and we believe his work, *Geology, Introductory, Descriptive, and Practical*, in two volumes, of which we gave a favourable notice in a former Number, has met with well merited success. In the volume before us, the author has endeavoured to give a perfect abstract of the general principles of his former work, in a shape possessing facility for reference, rather than a statement to be read, under the hope of exciting a more general pursuit of the subject, than that the student should feel himself satisfied with what he may have already attained. With this view he has worked up his materials into a perfect epitome of the science, which, while it may be looked upon as a most complete elementary work, and one which may be perused with the greatest benefit by the mere student, at the same time presents so accurate and well digested a treatise on the science as at present understood, its application to engineering, architecture, and agriculture, and the present progress of physical geology, as to form a most perfect book of reference in a moderate compass, by which the mind may be refreshed on any point throughout the whole range of the science, without wading through pages of a more voluminous work, and for general purposes with equally successful results. In addition to what forms the subject-matter of the volume, the author has introduced an analytical index, or general summary, for reference, by which every detail of the subject in the volume is at once laid before the reader. Mr. Ansted, in his works, is evidently impressed with the necessity of *system* in imparting geological information, and, while his previously published work is calculated to teach the science thoroughly in its descriptive and practical details, the present volume will be found a not less readable and instructive essay, while it is more particularly calculated to recal facts to memory, and increase the desire for the investigation of this interesting science, by divesting it of all its crudities, and rendering its investigation at once exciting and satisfactory.

The Practical Miner's Guide, with a collection of Essential Tables, Rules, and Illustrations, exclusively applicable to Mining Business. By JOHN BUDGE. London: Longman and Co.

Among the various works which have issued from the press, for the purpose of facilitating the various processes of mine surveying, dialling, and the generally complicated operations in connection with mining in all its branches, perhaps, few have enjoyed a more deserved reputation than the first edition of the *Practical Miner's Guide*, by Mr. John Budge, which has now been some years before the public, and regarded as a standard, and highly useful work. We have now before us the second edition of this publication, and which, without possessing any material alteration in its general features, is replete with useful additions, extending the principles originally laid down, and showing the practical application of the mathematical tables and rules, to every description of surface and subterranean surveying. The work is divided into three parts—the first containing an explanation of the tables contained in the work, consisting of the application of plane trigonometry to the correctly laying out, and sinking diagonal and perpendicular shafts, driving levels, surface surveying, &c.; the second is an essay on some miscellaneous subjects of essential importance to the practical miner, such as the most approved manipulation in the assays of silver, copper, lead, and tin ores, on the power of steam-engines, water-wheels, &c.; and the third contains remarks on traverse dialling, the necessity of a perfect system of taking plans and sections of mines, concluding with, under the head "Geology," a description of the phenomena of slides, cross-courses, faults, &c. The work thus appears before us in a much more imposing character than its predecessor, and containing, as it does, a great deal of really useful and sound practical information, we shall give a considerable portion as ext acts, for the information of those whose avocations may not render the purchase of the volume necessary, while to the tyro in the scientific pursuits of mining, as well as the more experienced practitioner, we strongly recommend the possession of the work itself, as one resulting from sound practical experience, and containing tabular matter of no small standard value. These extracts will commence in our next.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

SMART'S ELLIPTICAL CONVEX METALLIC FLOATS,

FOR STEAM-SHIPS, as applied to the Bristol and Dublin steamer *SHAMROCK*, and to the *SWIFT*, between Newport and Bristol; and also to the *OSPREY*, running between Bristol and Waterford. The patentee has now the satisfaction to announce, that, in addition to the ships already named, he has granted a LICENSE to the Bristol General Steam Navigation Company to USE his PATENT FLOAT in all their steam-ships, comprising the Dublin, Cork, Waterford, and the various channel port steamers, varying in power from *forty* horses to *two hundred* each.

The numerous ADVANTAGES attending this valuable invention may be seen below:

1. The appearance of these floats is light and elegant.
2. Their durability and stability are indisputable, as may be instanced by the *Shamrock* steamer, which has been fitted with them for nearly twelve months, and has since steamed *twenty-five thousand miles*. The floats are now as firm and good as they were the first day.
3. Vibration is reduced so as to be scarcely perceptible; thus, the engines are eased, and both they and the ship suffer less wear and tear; and, from their peculiar form, they are strikingly advantageous in cases of strong head wind and heavy sea. Backwater and undulation is also reduced to its smallest quantum, and thereby lessening the chance of accident to small boats, barges, &c., which has hitherto been consequent on the operation of the common paddle-float, particularly in crowded rivers.
4. They more readily arrest the progress of a ship in chances of a collision, the concave side taking the water when this operation is performed. This is of great importance in preventing collisions, or backing off a shore.
5. They are very simple, and are easily applied to any paddle-wheel, at nearly the same cost as the common float, and THEY INCREASE THE SPEED MORE THAN ONE KNOT PER HOUR.

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For license to use them (for which the charge is 10s. per horse-power), apply to the patentee, Mr. ROBERT SMART, 5, Grenville-place, Hotwells, Bristol, who will personally attend the fitting, if required, his travelling expenses being paid.

AGENTS.

Messrs. George Lunell and Co., engineers and shipbuilders, Bristol.
W. J. Le Feuvre, Esq., Southampton.
J. N. Smart, Esq., Swansea.
Thomas Mowatt, Esq., engineer, Leith, near Edinburgh.
Scott, Sinclair, and Co., Greenock.
W. H. Hutchinson, Esq., Hull.
J. R. Pim, Esq., Dublin and Liverpool.
Jukes, Coulson, and Co., 12, Clement's-lane, London.

*** Testimonials of the highest order, on application to the patentee or his agents.

Bristol, December, 1844

GREAT BRITAIN MUTUAL LIFE ASSURANCE,

14, WATERLOO-PLACE, PALL-MALL, LONDON.

THE CHISHOLM, Chairman.

WILLIAM MORLEY, Esq., Deputy-Chairman.

GREAT ADVANTAGES OFFERED TO POLICY HOLDERS BY THIS INSTITUTION.

A large and immediate accession of assurances by the transfer of the policies of the "Achilles British and Foreign Life Assurance Association."

The whole of the PROFITS DIVIDED annually among the MEMBERS, after payment of five annual premiums.

An ample guaranteed capital, in addition to the fund continually accumulating from premiums, fully sufficient to afford complete security.

CREDIT given to MEMBERS for half the amount of the first five annual premiums without security.

CREDIT allowed to MEMBERS for the whole of the first five annual premiums, on satisfactory security being given for their payment.

Transfers of policies effected and registered (without charge) at the office.

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Claims on policies not subject to be litigated or disputed, except with the sanction, in each case, of a general meeting of the members.

An extremely low rate of premium, without participation in the profits, but with the option, at any time within five years, of paying the difference between the reduced rates and the mutual assurance rates, and thus becoming members of the society, and entitled to a full participation in the profits.

Extract from the Reduced Scale of Rates, for an assurance of £100.

Age.	One Year.	Seven Years.	Whole Life.
20	£1 0 9	£1 1 6	£1 13 11
30	1 2 9	1 3 3	2 2 1
40	1 5 6	1 7 6	2 16 4
50	1 15 9	2 1 6	4 1 11
60	3 3 5	3 17 0	6 8 3

Full particulars are detailed in the prospectus.

A. R. IRVINE, Managing Director.

Just published, a new and important Edition, price 2s. 6d.; free by post, 3s. 6d.

THE SILENT FRIEND: a medical work, on Human Frailty,

Nervous Debility, constitutional weakness, excessive indulgence, &c.; with Observations on Marriage, &c. By R. and L. PERRY and Co., surgeons, London. Published by the authors, and sold at their residence; also by Strange, 21, Paternoster-row; Hannay and Co., 63, Oxford-street; Noble, 109, Chancery-lane; Gordon, 146, Leadenhall-street; Purkiss, Compton-street, Soho, London.

The CORDIAL BALM of SYRIACUM is a stimulant and renovator in all spasmodic complaints. Nervous debility, indigestion, asthma, and consumption, are gradually and imperceptibly removed by its use, and the whole system restored to a healthy state of organisation. Sold in bottles, price 11s. and 33s.

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THE CONCENTRATED DETERSIVE ESSENCE.—An anti-syphilitic remedy for searching out and purifying the blood from venereal contamination, scurvy, blotches on the head, face, and body, ulcerations, and those painful affections arising from improper treatment, or the effects of mercury, removing secondary symptoms, and all eruptions of the skin. Price 11s. and 33s. per bottle; also £5 cases.

PERRY'S PURIFYING SPECIFIC PILLS have long been used as the most certain remedy for scorbutic complaints of every description, eruptions of the skin, pimples on the face, and other disagreeable affections, the result of an impure state of the blood. These pills are perfectly free from mercury, capaiva, and other deleterious drugs, and may be taken with safety without interference with or loss of time from business, and can be relied upon in every instance. Sold in boxes, at 2s. 9d., 4s. 6d., and 11s. each, by all medicine vendors—of whom may be had the *Silent Friend*.

Messrs. Perry and Co. may be consulted at their residence, 19, Berners-street, Oxford-street, daily, from eleven till two and five till eight. On Sundays from ten till twelve.

NOTICES TO CORRESPONDENTS.

"S. B."—We have not yet been able to obtain a description of the Rotary Engine patented by the Earl of Dundonald, but we expect one on this principle will be completed in about a fortnight—an inspection of which we shall be favoured with, when an account of the same shall appear in the Journal.

METCALFE'S PATENT MODE OF PROPULSION.—"Inquirer" is informed that we cannot, at present, give the desired information, as it will be four or five months before the patentee will be able to specify. We are informed, however, that the invention is of considerable importance, and will enable any number of persons to travel on common roads at great speed. We shall not lose sight of the subject.

RAILROADS IN SPAIN.—The letter of "A Small Capitalist" must stand over until the whole of "C. L. W.'s" communication has appeared.

"C.E. AND F.G.S."—We are always happy to receive communications on subjects connected with the objects to which the Journal is devoted, but, where remuneration is expected, a previous arrangement must be entered into.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, MAY 3, 1845.

The advance in the price of iron, within the past few months, to which we have from time to time directed attention, and the general improvement in the iron trade, has been most encouraging—while, as might naturally be expected, would be the case under such circumstances, expectations have been raised, and prices quoted or imagined, which any one possessing a knowledge of the trade itself, must have been well aware could never be maintained. We last week noticed the considerable rise which has taken place, while the result of the meetings held during the last and present week, noticed in an article appended to these remarks, is, in itself, convincing evidence, that we were not wrong, in saying the price of iron had reached its maximum—at least, for the present. The demands of the colliers, and others employed, have, we admit, been met by the masters with a liberality correspondent with the advance in prices, and the profits which they derive; but there is a limit, and glad are we to find, that the ironmasters have, of their own accord, determined to prevent, so far as they can, those consequences which must result from a reaction. The demand for iron, more especially bar, and railway iron, for the next three years, can be pretty well ascertained or calculated upon, and that alone will not only keep the present works in active operation, but may justify a partial extension; but this is only for a time, and we caution those who would embark capital, from hastily rushing into undertakings, which, however they may answer for the moment, yet, it must be remembered, require a large capital, not only invested for carrying on operations, but expended in the "plant."

We feel satisfied, that, with prudence on the part of the ironmasters, the price of iron, if not supported at the present quotations, will, at least, obtain such a price, that while it not only pays a good per centage on the capital employed, will give to the collier and miner, as well as to all other operatives, fair wages—this is all that can be required or looked for, and with this, we feel assured, all will be content. The letters which appear in our columns give some valuable statistics and points for consideration—that a certain animus pervades the writers is only natural, but it is only fair to look on both sides the question.

Having had occasion of late to revert, with unusual anxiety, to the position and prospects of the iron trade, and being in possession of facts materially affecting, and opportunities for successfully securing its stability, we have stated our conviction of the issue of the present movement, and pointed out those attendant circumstances calculated to compromise or benefit its interests. A few weeks since, we laid before our readers a succinct statement of the probable produce and consumption of iron for the present year, and, estimating the total supply at 1,330,000 tons, and the consumption at 1,803,500, anticipated a deficiency of 500,000 tons. With respect to the former, we think our calculation was fully warranted by a comparison with former years: the produce in 1844 was 1,210,000 tons, and that of the preceeding year a shade more; so that our computation for the make of the kingdom, during the current year, was certainly not depreciated, and, we believe, not impugned—at the same time, our assumption of the probable demand, its exceeding the supply by a considerable figure, and the consequent effect upon the trade has been controverted, at least, in an influential quarter. A correspondent of the *Times*, of the 21st ult., raises a doubt of our accuracy, and affects to refute our position: admitting the supply to be as we estimated, 1,330,000 tons, he computes the consumption at 886,700, instead of 1,803,500 tons, or a reduction of more than one-half, and, consequently, converting our estimated deficiency of 500,000 tons into excess of nearly equal amount—443,300. These assumptions are so widely different, so contradictory in every respect, whether immediate position or future result, that we cannot but take up the question, as whatever the weight to be attached to our former assumptions, no one will dissent from us in this opinion, that the most important results are dependent on such computation, and that the effects of incorrect and conflicting statements must prove highly prejudicial, unless cautiously distinguished. We cannot but feel, therefore, that the interests of the trade are so deeply involved in a satisfactory explanation, that a plain confirmation of our statements is absolutely due to ourselves and the public.

In our previous article respecting the prospects of the iron trade, we based our estimate of consumption for this year, mainly, on the export trade, and on the requirements for railways at home; and we stated the extent of lines actually consuming iron, or immediately to be supplied with it, according to positive contract, to be 2000 miles—an actual engagement being concluded for a supply of 250,000 tons to construct these rails. Now, the *Times'* correspondent takes upon himself to reduce, at one breath, this amount—an amount, be it remembered, of rails *contracted* for—to 125,000 tons, arguing on premises not questionable, but fallacious. He conceiving that our calculation was framed on all concocted projects, on all schemes now before the world for railway construction, naturally observes that but a small proportion will receive the sanction of the Legislature; and assuming that 2000 miles of railway will be necessary, the more reasonable period for completion would be four instead of two years. Did we not consider it due to ourselves to defend our representations, we should be disposed to let the whole matter remain unnoticed, since the ignorance displayed by the correspondent on this point, would naturally divest him of all confidence whatever. Surely, he does not suppose that the 300 projects now devised do not comprehend more than 2000 miles of railway; indeed, no one with common intelligence could have imagined that our 2000 miles, for which rails had been contracted for, could—had we omitted this qualifying and conclusive sentence—have embraced all the public works now before the world. But, arguing on this fallacy, he unceremoniously converts the demand of 250,000 tons into 125,000, because, forsooth, these 2000 miles will require four years to complete; that may or may not be—we have our own opinion upon the period it will require; but, as to the delivery of a certain quantity of metal, constructed for a specific purpose, at a specific time, no doubt can be entertained.

This unfounded assumption, however, is not confined to this one item, but, still acting upon it, the *Times'* correspondent reduces our estimate at the same ratio throughout; thus, the one-fifth loss by conversion from pig-iron into rails is changed from 50,000 tons to 25,000; the chairs from 70,000 tons to 35,000; the loss in manufacture of 5 per cent., from 3500 to 1700; for railways commenced at a previous period, and supplied on retrospective contracts, he unjustifiably includes no allowance, stating, as a reason for striking out this item of 150,000 tons, that we provided for it in our first particular of 250,000 tons; to this we could demur, for he himself wrongly argued, that our assumption was on lines uncontracted for—nay, more, unmatured; but we have avowed, that we computed for *contracted* lines, as expressed, and while, therefore, maintaining this, we controvert his view, that lines contracted for in 1844, or previously, were included in the estimate. Preserving, therefore, our original calculation, so far as railways are concerned, we set down, as before, 823,500 tons as a fair and unexaggerated amount anticipated for the year. With respect to the export and home consumption being reduced, in consequence of the rise in prices, we think our opponent has strangely confused the cause with the effect; we will reply to this objection, by asking him a question—What occasioned the rise in price?—Was it not the vast increasing export consumption, coupled with the unlimited demand at home? But let us see whether facts, unanswerable statistics will not incontestibly confirm our position. In 1834, a year of general depression, the average price of bar-iron at Liverpool being 7*l.* 5*s.* per ton, the export of iron was only 174,000 tons: in 1839, when prices had reached 10*l.* 5*s.*, the foreign market required no less than 270,000 tons; here, then, the question of high prices necessarily entailing reduced consumption is satisfactorily answered, and may we not anticipate an increase, rather than a decline, when in the face of an augmenting foreign demand (even with ten years to 100,000 tons), the selling prices at Liverpool are at present from 9*l.* 10*s.* to 9*l.* 15*s.* for the same iron which in 1839 was quoted at 10*l.* 5*s.* to 9*l.* 10*s.*? especially, too, as the adoption of railways on the continent, now becoming daily more general, will signally affect our export traffic. The same remarks are applicable to the home consumption also, which the *Times'* correspondent anticipates will not exceed 320,000 for the year: we are perfectly satisfied, on personal information, that our estimate of 480,000 tons was far below the mark—600,000 would be much nearer the figure—and we are here reminded of another circumstance, which we will name *en passant*, to show that, so far from our statement being over-coloured, or delusively framed, so as to meet any argument or purpose, we have throughout, so far from exceeding, kept considerably *below*, the legitimate computation. Instead of taking one-fifth, as the loss in conversion from pig-iron to rails, we might have been fully warranted in saying one-third; but so cautious were we not even to bear the semblance of exaggerating amounts, that we sedulously lowered the standard of probable demand, and as readily gave the maker the full benefit of enterprise: thus waving many considerations of which we might have fairly availed ourselves. Now if, instead of taking one-fifth for waste, we had named one-third, in place of 50,000 tons loss, in converting the metal into 250,000 tons of rails we should have 86,666 tons; and this increase carried to the grand total consumption, would swell it from 1,803,500 to 1,840,166 tons; and when we state this, all practically acquainted with the trade will see the justice of our computation, and know that in the very best conducted iron-works the ton of finished rails is not made with less than 27 cwts. of pig-iron—2240 lbs. in each case to the ton. Now, let us apply this to even the correspondent's estimate, and instead of

For computed 2000 miles of rail ..... tons	125,000
Add loss	25,000
Making ..... tons	150,000

It should stand—

For computed 2000 miles of rail ..... tons	125,000
And loss	43,750
Making ..... tons	168,750
Difference	18,750

and again substituting this for the second correspondent's (*a shareholder's*) more fair, but still incorrect, calculation, the deficiency which he allows on some of his coadjutor's data, to equal 43,500 will be increased to 62,250 tons.

But, while we contend for our former position—that high rates of prices do not materially affect consumption—and while, having not only defended, but satisfactorily established, every particular of our previous estimate, we deny the statistics of our adversary; we are free to admit, in accordance, also, with our invariable professions that a rise too rapid, or unwarranted by circumstances, will, in the end, defeat its own stability—will be but temporary—and, if not assiduously guarded against, be followed by a re-action as inevitable as its effects will be destructive. Though it is frequently an ungrateful duty to predict such consequences, we have, from time to time, faithfully and fearlessly expressed our apprehensions, and have urged the necessity of extreme hesitation in raising prices, and suggested, at least, precaution.

These recommendations, we are happy to say, have not been lost upon the trade; we last week had occasion to announce the partial, and the contemplated universal, reduction of 40s. per ton upon manufactured iron. This, in the early part of the week, was carried very generally into effect, and, subsequently, more definitively arranged by a meeting of the trade. On Thursday last the Staffordshire ironmasters decided, at a meeting at Birmingham, that the last advance of 40s. per ton should be rescinded, fully bearing out our previous anticipations, and coinciding in our suggestions. The only question now is, will the reduction at this late period have the desired effect?—true, it is within a very short period of the late rise, but should that rise have ever occurred? The sudden fall after so sudden and unprecedented an increase, cannot be viewed (by the foreign market especially) but with distrust, and our continental traders, who were beginning to come in, will now, we suspect, pause; yet this obstruction will be at the most but temporary, and no serious derangement can reasonably be anticipated from this last decisive move, which we consider highly laudable, and warranted, if not imperatively called for, by the questionable state of the market.

We last week adverted to the position in which Mr. HUMPHRY WILLYAMS had placed himself, with reference to his connection with the Stray Park and Camborne Vean Mines, he having, as we were informed, taken up the adjoining sett of Wheal Francis, and we readily give insertion to the letter of a correspondent, bearing on the subject, although, we must say, that a letter direct from Mr. WILLYAMS would have been far more satisfactory, negativing the representations made; which, however, we apprehend, from the further inquiries we have instituted, are too well founded to admit of aught but apology. There can be no doubt, but that Mr. HUMPHRY WILLIAMS, or any other gentleman, is at perfect liberty to take up a sett and make the most he can of his bargain, which may, as in the present instance, cost him nothing; yet, we are still to learn, that in accordance with the *morale*, which, we hope, is attached to the management of mining enterprise in Cornwall, it is to be allowed, that a director or member of committee, of the adjoining mine, after taking part and being present on occasions, when the adjacent property was not only contemplated being worked, but was in part, if not fully promised, that he should have availed himself of the position in which he was placed, acquiring information and possessing influence, and so applied these advantages to his own benefit, to the manifest injury of those, with whom he was not only associated, but whose interests were committed to his care. We consider that an explanation is due from Mr. HUMPHRY WILLYAMS, and to which we shall most cheerfully give insertion; while we cannot imagine, for a moment, that he will evade or think it beneath his notice, to deny a charge, which reflects sa much on his probity—at the same time, that we are led to hope an explanation will be afforded, which will exculpate that gentleman from the charges which have been put forward.

Were it not for the esteem in which Mr. HUMPHRY WILLYAMS is generally held, and the high character he possesses in the county, we should have, perhaps, allowed the matter to have escaped public attention, leaving it to those interested to have taken such steps as they might deem expedient; but we feel that it is not only due to the interest he represents, but even to Mr. HUMPHRY WILLYAMS, to canvass well the matter, which has caused no ordinary sensation with adventurers in mines—at least, that is to say, the *out* adventurers. If acts of this nature—for, in the absence of any denial, we must assume the representation made us to be true—be permitted to pass unnoticed, then farewell to all confidence, and, with that, we may say, farewell to the mining interest of Cornwall. We have enough to combat with—the import of foreign ores—the measures adopted for the removal of the slight protective duty, to which we adverted in a late Number, is sufficient in itself to induce every Cornishman to be honest, if even he considered his own interest alone. Mr. WILLYAMS is a smelter, and, to his honour be it said, is not one of the memorialists for the admission of foreign ores duty free. His partners signed the memorial, but, true to Cornwall, he would not attach his signature to an instrument which, in a measure, if carried out, was the death-warrant of the mining interest of that county. We hailed with pleasure and with pride the absence of his name, and that of Mr. MICHAEL WILLIAMS, from the instrument, but we regret that we should have occasion to refer to any act of his which should compromise his character. We will even yet hope that an explanation may be afforded; and, furthermore, that the suggestion of our correspondent, that the adventurers in Stray Park and Camborne Vean may yet participate in any advantage which may arise from the "take" will be carried out.

We need hardly say that it is upon principle we thus bring before our readers a matter which might be considered rather of a private nature, yet we feel assured no one would be more ready than Mr. HUMPHRY WILLYAMS himself to institute an inquiry, and afford the means of explanation, where the character of a man, heretofore maintaining a high position, was called into question. We can only, in conclusion, express our hope that the explanation, when afforded, will be satisfactory, and that an amicable arrangement will be entered into between Mr. WILLYAMS and the adventurers; it is with such desire, and in such expectation that we decline giving insertion to one or two letters we have received on the subject, but which, if needs be, shall meet attention in our next.

THE IRON TRADE.

A meeting of some of the most influential Staffordshire ironmasters, was held on Thursday last, at Birmingham, when it was resolved to take off the last advance of 2*l.* per ton upon manufactured iron, which, it will be remembered, we refered to in our remarks of last week. A meeting of iron merchants was also held at Liverpool, on Wednesday last, when it was stated, that the great objection to the present mode of transacting business in Scotch pig-iron, was that this description of property, unlike cotton or other articles, which are warehoused by third parties, and who can transfer in their books possession from party to party, the maker is both original contractor and warehouseman; transfers are made by the delivery orders of the first buyer upon him, endorsed from party to party, and the contract not being in itself assignable, cannot be enforced by any one but the person with whom it is made, or an authorised assignee; so that, by the time it gets into a third hand, there are no means of enforcing the contract against the original seller. The object of the meeting, therefore, was to have warehousemen appointed in Glasgow, to take delivery of pig-iron, and issue certificates for that purpose, which should be transferable, and afford a security in point of legality. After a long discussion, in which the advantages of the proposition were universally admitted, a deputation was appointed to communicate with the trade on the subject of the meeting, and empowered to convene another meeting to adopt final measures. A meeting of the united body of the trade is, we understand, intended to be be held on Monday next.

The iron market is much firmer in Scotch pigs, the speculators again turning their attention to it; 85s. has been paid within the past week for 10,000 tons, and there are few sellers now under 87s. 6d., though we are aware of an offer being made of 1000 tons Scotch pig at 80s., which, being under some risks, was even declined by the party, though the terms were subsequently accepted by another less cautious trader.

FRENCH LAWS AFFECTING THE IMPORTATION OF IRON.—An act is now in the course of discussion before the French Chambers, relative to the customs' laws, and M.M. Pelterean de Villeneuve and Duval de Fraville lately proposed an amendment, respecting castings, to the effect, that the duty of 7 f. per 100 kil., now levied on all rough castings imported by sea, should also be extended to those introduced by land; this amendment, which it will immediately be seen would materially concern the trade of Belgium, was, however, rejected by the Chambers. Mr. Peltereau, in taking up the proposition, discusses the considerations which induced the legislature of 1822 to concede to the law now in force, and contends that the spirit of that law is, to establish on an equal footing the castings of France and Belgium. In fact, besides the duty of 4 f. to which they were subject on entering France, the Belgian produce had previously paid a tax of 2 fr. 35 c. on their leaving their own country, which proves that, virtually, this equal footing was sought; that is, that the transit by sea was much less expensive than that by land, and, therefore, on the former mode a tax of 7 f. was imposed. But now the conditions are changed, by different measures taken by the Belgian Government in the interest of the exportation of its mineral produce. First—the redemption, by the State, of the Belgian portion of the Sambre Canal, and the almost gratuitous transit of castings on it to Paris; secondly—the suppression of the export duty; and thirdly—the reduction of fares on the Belgian railways, which now renders its transport by land easier than that by water. All this is true; but, nevertheless, they are not the principal causes of the circumstances mentioned by M. Peltereau—the augmented importation of Belgian castings, which has increased *six-fold* in four years, and the ill success of French metallurgy. The origin of that industrial excitement which has now for some years characterised Belgium, was the creation of a very considerable number of iron manufactories, the inordinate production and stagnation which ensued, and at last, as a natural consequence, the commercial crisis, the almost universal failure of these works, and the sale, at any price, of the over-stocked produce, and, subsequently, the transfer to the French soil of the Belgian works, erected by their proprietors for the working the casting furnaces, which they originally possessed in Belgium. This, then, is the real cause of the increased importation, injurious, no doubt, to French labour, and, in particular, to that of the north; but another concurring circumstance, similar to that of the interior, has been, we think, still more fatal. France, in effect, is still prejudiced by this industrial excitement, and the sprit of charlatanism and illegitimate speculation still matures its victims—the result being the same as in Belgium. It would be useless to speculate on the other causes of the failure of our metallurgy, and of the dissolution of that equality on which home and foreign produce was originally based. That which more prominently presents itself at this moment as the chief undermining principle, is the exhaustion of the Belgian castings, and their recent exportations in Germany, indicating, too, the advance of prices in a very short space of time, among the neighbouring districts; this increase has now reached from 8f. to 11f. per 100 kil., and if to this price is added 10c. for the export duty, and 4f. 40c. the import duty, it arrives on the frontiers at a price of 15f. 50c., whilst the refined castings at Saint Dizier are not quoted at a higher figure than thirteen francs. If, then, under actual management, the French casting can even struggle against the Belgian, is it not a still more convincing proof, that this failure of the reciprocal and equal standing, and the distress of the French metallurgist, are due, not to the reduction of the duties, but the causes we have named. And if, in spite of this dimunition in the tariff, which was considered necessary in 1822, this balance between these two branches of national commerce could be preserved, is it not a most unequivocal proof of the great progress of French metallurgy.

HUNGERFORD SUSPENSION BRIDGE.

According to the notices issued for some time past, this bridge was thrown open to the public on Thursday last, the 1st instant. No procession, or any of the usual formalities, took place on the occasion—a few of the directors merely passing over amid a display of flags, firing of guns, &c., when the public were admitted, and a large number of ladies were presented with an engraving of the bridge, printed in gold, on glazed card. A very large concourse of people continued to throng the avenues, and it is estimated that nearly 25,000 persons passed the bridge during the first twelve hours, paying about 50*l.*

The directors and their friends afterwards dined at the London Tavern, when William Hawes, Esq., presided, in consequence of the absence of the Earl of Devon, the chairman of the board of directors; among the company present were the engineer, I. K. Brunel, Esq., the Rev. Mr. Prowse, Dr. Moore, J. L. Seager, R. Todd, W. Evans, E. Cooper, Esqs., &c. In proposing the prosperity of the undertaking, the Chairman passed a well-merited eulogium on the talents of the engineers, to which Mr. Brunel made a suitable reply; and on the health of the Earl of Devon, and the directors having been proposed, and warmly responded to, the same was acknowledged by J. L. Seager, Esq.

As this structure is now open to the public, and will no doubt become a very considerable thoroughfare, from its central position, the following information as to its construction will, no doubt, be interesting to our readers. The suspension portion of this bridge (which is intended for foot passengers only) is composed of four massive chains, two on each side the platform, placed one above the other; the greatest part of these chains are formed of ten and eleven links, alternately; but near the piers, to give increased strength, to bear the extra strain, resist the force of the wind, and prevent vibration, they are increased to eleven and twelve links. Two brick towers, or piers, in the Italian style of architecture, are built in the river, and over these the chains are carried in the following manner—viz., to the chains are attached large and strong wrought-iron plates, firmly bolted together in a vertical position, and then again to a horizontal plate, forming a saddle; on the top of the pier is a thick iron plate, supported by solid iron and timber girders, upon this are placed fifty anti-friction rollers, on which rests the saddle with the chains, by which arrangement the saddle has a lateral motion of eighteen inches each way, or three feet in all; and should one portion of the structure, at any time, become over-crowded, the chains would adjust themselves, and cause the strain on the piers to be still perpendicular, without any tendency to pull them over.

The following are the several admeasurements of the bridge:—Height of tower, 80 ft.; central span between the towers, 676½ ft.; length between abutments, 1352½ ft.; width of platform, 14 ft.; height above high-water at centre, 32½ ft.; height above high-water near towers, 28½ ft.; length of each link, 24 ft.; width of each link (being 1 in. thick), 7 in.; total number of links, 2600; weight of links, 715 tons; number of links between piers only, 1280; their weight, 352 tons; sectional area of chains in centre, 296 sq. in.; sectional area of chains near the towers, 312 sq. in. It will thus be seen that the centre span of this structure is 110 feet wider than the celebrated Menai Bridge, and is, we believe, the widest span of any bridge in the world, either on the suspension principle or otherwise. Its appearance is picturesque in the highest degree; and from near the Admiralty, opposite the end of Whitehall-place (the best point of view from which it can be seen), its appearance may well be termed that of a "flying bridge." It has an exceedingly beautiful appearance, also, from the highest point of Westminster-bridge. The following ingenious method was adopted for raising the chains, without the necessity for scaffolding of any kind, or interrupting, for a moment, the navigation of the river. On the completion of the towers to the necessary height, three of Andrew Smith's patent wire-ropes were drawn from one abutment to the other, on each side, over the towers, in the situation eventually to be occupied by the permanent chains; cradles were then hung on these ropes, and made to traverse at pleasure, as required; these cradles contained the necessary windlasses, &c. A barge, containing the links, being moored beneath, four men hauled them up, placed them in their proper place, pinned them together, and thus formed, in the first instance, a chain, consisting of alternate two and one links; the temporary wire-ropes were then removed, and the other links continually added, until the chains were completed: the suspension rods were attached in their places, as the work proceeded, to which the platform is suspended.

This elegant structure is amply secure as to strength. A square inch of iron breaks with a weight of 27 or 29 tons; but, taking what is termed the *impairing* weight—viz., that at which it begins to stretch, and which is about 17½ tons, and multiplying it by the sectional area in inches—we have 296 × 17½ = 5180 tons, the estimated load the structure will bear, and it is calculated to bear a much greater weight than that of a dense mass of human beings packed upon its surface, and estimated at 100 lbs. per square foot; it has cost 106,000*l.*, I. K. Brunel, Esq., being the engineer-in-chief, and Mr. P. P. Baly the resident, upon both of whom it reflects the highest credit.

IRON SHIP-BUILDING.

The use of iron in the construction of steam-ships, though now no longer a novelty, is, we believe, not by any means generally understood, and although the science of iron ship-building has made great and rapid improvements in the last few years, there is yet much to be effected, but which, by the happy combination of scientific theory and experience from practical results, will, in a few more years, entirely supersede the use of timber in ship-building. The cost of iron vessels may in general be considered as nearly as possible the same as timber, nor does a fluctuation in the price of iron make any considerable difference, so large a portion of the whole cost being labour. Among the advantages which may be claimed for iron vessels is their superior sailing and steaming powers, being lighter in proportion to size, drawing less water, and larger stowage in proportion to external measurement. They are also completely water-tight, of great importance to many freights of perishable goods, and which is accomplished by close sheet-iron lining inside the ribs. Experience begins now generally to prove that iron vessels possess greater durability and strength than those of wood; there is at least no fear of dry-rot; they are but little exposed to those universal occupants of ships—rats; and the liability to corrosion, an objection which has been raised against them, is not found in practice to be of much importance, while repairs of every description can be effected with every facility. But the greater security to life and property which are possessed in an eminent degree by iron ships, constitutes their principal advantage, built in distinct compartments, with water-tight iron partitions crossing the ship, so that if any part of the vessel has a hole stove in it, one compartment only fills, and the buoyancy of the vessel is retained. This eminent superiority of iron boats is amply borne out by experience, and the numerous instances of partial shipwreck to iron vessels, in which they have afterwards been got into port, and human life secured, where timber ships must have been lost, is a powerful argument in their behalf. The *Nemesis* struck in the Bristol Channel, while going eight or nine knots; one compartment only filled, and she steamed several hours, until obtaining additional pumps in Mount's Bay, the space was pumped out, and the leak stopped. The *Brigand*, a large iron trader from Bristol to Liverpool, struck on sunken rocks off the Scilly Islands, filled her forward compartment, had her paddle-wheel forced in, injuring the plates, and the engine compartment filled also, yet the whole crew had plenty of time to save themselves and their clothes, and she afterwards went down in deep water.

The *Wye*, from Bristol to Chepstow, was cut down by an Irish steamer a foot below her water line; yet this only filled her forward compartment, and she proceeded on her voyage and landed her passengers in safety. The *Vanguard*, an iron steamer, which was exposed for ten days to heavy breakers in White's Bay, Cork, is also a case in point of the strength of iron, and the value of compartments, and many other instances might be given. The great difficulty which was experienced, in consequence of the action of the compass being impeded, has, we believe, been satisfactorily surmounted, and the accumulation of grass and weeds which attach to iron vessels to so great an extent as to impede their progress to a serious degree, will be ultimately entirely prevented. The application of iron also to the construction of life-boats for steam-packets and passenger ships of every description, as well as to all ships' boats, deserves the most serious consideration and encouragement. In weight and price they are about the same as oak, while they possess many advantages, which must, however, wait the test of experience before they can be duly appreciated. Iron, well painted before being used, and kept in good order afterwards, will last a very long time; and should the galvanic process be made available for its protection under such circumstances, their durability will, doubtless, exceed that of wood; and it is to be hoped that, in a short time, every sea-going vessel will carry such a boat, or boats, capable of carrying in safety every human being on board. We have had our attention called to one plan for a boat of this kind twenty-four feet long, eight feet broad, and three to three and a half feet deep. She is to be formed of sheet-iron inside and outside the ribs—thus forming an air-tight tank all round divided into compartments; air-tight tanks also cross the inside, and form the seats; the buoyancy of this boat is equal to 15,000 lbs.; it will *seat* forty passengers, whose aggregate weight may be taken at 6320 lbs., but is quite capable of carrying seventy people, even if the open parts were filled with water. The weight would be about a ton, and one could be made for about 50*l.*; but, should they become an article of general manufacture, might be made for considerably less. The question of the utility of iron for ship-building may be considered as decided, and we think the time is rapidly approaching when our "wooden walls" will be among the "things that were."

Nasmyth's Steam Hammer and Pile Driving Apparatus.—The ingenious application of steam by direct action to the forge hammer, first introduced by Mr. Nasmyth, of Patricroft, more than two years since, is making most triumphant progress, and is evidently effecting very important results in the advancement and improvement of the manufacture of wrought-iron in its various branches. Simple in principle, yet powerful to an extraordinary degree, and capable of being managed with the most perfect facility and precision, the "direct action steam hammer" is, indeed, worthy of the consideration of iron manufacturers, and the engineering world. Having long paid attention to the imperfect, and very slow and uncertain effects of the old system of driving piles, Mr. Nasmyth afterwards applied the principle of his steam hammer to a pile driving apparatus (a notice of which we gave in the *Mining Journal* of the 17th of August last). The first experimental operation of the perfected machine was made on Saturday last, and with results so extraordinary and important, as to have astonished all who witnessed them. On this occasion a pile sixteen feet long, and fourteen inches square, was acted upon; the hammer for driving the pile weighed 50 cwt., having a fall of 3 ft., keeping its relative height as the pile descends, and goes down with it. The engine drove the hammer at the rate of sixty-five blows per minute, and by twenty of these the pile was driven fifteen feet into hard ground; the operation being so easy, rapid, and complete, as to excite the most pleasing admiration in all who witnessed it. The vast rate at which this machine performs its operations, must open a new era in the important process of piling, and while hitherto it has ever proved the most serious and expensive of engineering operations, in future we may expect the system to be introduced under circumstances never before contemplated, and the machine of Mr. Nasmyth, mounted on wheels, and rapidly driving its piles as it proceeds, will, no doubt, in the formation of railways over peculiar soils, effect a complete change, in their preparatory construction, their cost, and durability. In the construction and action of this machine, the principal novelty is the manner in which the steam by direct action is made to act on the ram or driving block, so that, merely by the alternate admission and escape of the steam, the rise and fall of the hammer is attained, while the whole active part of the apparatus, consisting of a cylinder, and the hammer, forming a piston, is allowed to sit freely on the head of the pile, and being about three tons weight, as before stated, adds greatly to its weight, and facilitates its descent. On one pile being driven home, there is some steam hoisting apparatus attached, by which the cylinder and hammer are again elevated to the top of the next, and the whole is regulated by one man with the greatest facility. Two of these machines are being prepared for the works at the great steam dock for the navy at Devonport, and they must rapidly make their way in all situations where pile driving is necessary, and where, as is now universally the case, economy and successful results are indispensable.

There are occasionally to be found hardy men, who are singularly indifferent to responsibility, and especially when that responsibility is incurred to an inert body of shareholders. Such seems to be the character of the directors of the Reversionary Interest Society, if we may judge from the bold and unprecedented step which they have taken in the discharge of their solicitor, without a hearing, after twenty-two years spent in the service of the shareholders! Had it not been for the advertisement of Sir George Stephen, which appears in our columns, we should have inferred that criminality of no ordinary description had been the secret motive for such a step, and that this motive was humanely veiled from the public eye; but, what will our readers think of it, when we explain that this arbitrary and tyrannical measure is vindictively taken, to punish the learned gentleman for his faithful protection of the interests entrusted by the shareholders themselves, under seal, to his special care? We never before heard or read of an act of cruel injustice of the same kind being perpetrated with such unblushing effrontery. Sir George is well known to be an eminent man in his profession, and has distinguished himself out of it by the energy and firmness of his character; he projected the Reversionary Society twenty-two years ago, and was appointed the solicitor to this client of his own creation, by the Deed of Settlement; last year he was instructed to obtain an Act for its incorporation, and counsel prepared the bill, giving enlarged powers to the shareholders; it seems that this was unpalateable to the directors, and, without any scruple, they erased the clauses, leaving their constituents to take care of themselves; but they forgot that those constituents were also Sir George's clients, and, consequently, in safe keeping; he very properly apprised some of them of what was going on, and they very summarily threw the bill overboard, for which the directors have, as summarily, thrown overboard Sir George himself! Yet the whole of his conduct has been vindicated by the opinion of such high legal authority as the late Attorney-General and present Chief Baron, Sir Frederick Pollock; and will, doubtless, be equally vindicated by the shareholders whom he has so resolutely protected.

We have had some experience in such matters, and we can assure shareholders, whether of this or any other company, that, in these times, they have no better security than an honest attorney at their directors' table, and incur no danger so serious as in a dishonest one at the same place! but, if attornies are to be thus punished for doing their duty, Heaven help us! It is difficult enough as it is, to find one among them in whom we can implicitly confide. On one point, however, Sir George seems rather green; he complains that he is removed without charge or hearing. What would he have? can he suppose that ten or a dozen men will boldly come forward and confess that their charge is, that he is too honest for them?—or that they will, if they can help it, allow him an opportunity of proving that it is so? No, no; it is in perfect keeping with such iniquitous proceedings, that all should proceed on the true hole and corner system. We suspect that there remains much in the back ground, and the shareholders are self-stultified, if they do not speedily afford Sir George a fair opportunity of exposing the whole. We have looked through the list of the directors, and their names are almost all unknown to us; we wonder where Sir George contrived to pick up such nurses for a child of his own begetting; they scarcely can be called even second-class men in the city.

We would call the especial attention of our readers to the Report of the Mexican Company, which appears in another column of our impression. Instead of being a losing, or rather ruinous, concern, as it has ever hitherto appeared, it now assumes a position at once satisfactory and promising. A clear profit of $11,483, after crediting the directors $2500, presents itself on the past year, and this, with the former year's balance of $1405, enables the company to pay a dividend of 7s. 6d. per share: while the balance-sheet of the Oaxaca ledger for the past year, shows a balance, transferred to stock account, of $135,000—being an increase of 15*m.* on the balance of 1843. These cheering prospects, presenting so gratifying a contrast to the previous history of the company, are indicative of a still greater success, inasmuch as they were established in spite of circumstances calculated to have retarded materially the progress of the undertaking. The political and social disturbances which have characterised the entire Mexican Republic, had their necessary pernicious consequences on this company, as well as every other department; but, notwithstanding these sinister circumstances, the company has not only progressed, but progressed so as to present an absolute profit, where, before, it had exhibited nothing but misfortune; and we are, therefore, warranted in anticipating a still more satisfactory advance in future. Shares, which, a few months since, were scarcely worth 10s. each, are now, we should say, well deserving a quotation of as many pounds, and should its success still continue increasing, as we anticipate, their value will shortly be even more.

Original Correspondence.

ON THE POSITION AND PROSPECTS OF THE IRON TRADE OF GREAT BRITAIN.

Etas de duro est ultima ferro.—Ovid Met.

Sir,—It is not without considerable reluctance that I now trespass on your columns, but misapprehensions having arisen, in various quarters, with regard to the prospects of the iron trade, in the absence of more elaborate information, I feel it incumbent upon me, as having bestowed considerable attention upon it, to do what I can, in a brief space, to place the matter, in what I conceive to be, its proper light. I assume that your readers are aware of the recent extraordinary re-action in the Scotch pig market, and that the original cause was the short-sighted policy of the makers, who have disposed of their produce in anticipation for nearly the whole of the year, and recognised the various sales by transferable accepted orders or scrips; and these scrips have been brought into the market and repeatedly sold, as though the representatives of iron actually in existence: men with an utter ignorance of the trade became enchanted with these "fatal facilities" of speculation, and, regardless of the warning of the satirist,

"Alas! what dangers do environ
The man who meddles with cold iron,"

boldly entered into extensive engagement, for future deliveries, and, with an equal precipitancy, sought to get rid of them, at almost any sacrifice, upon the first appearance of dullness in the market. Great danger of a similar crisis must always exist where—borrowing a phrase from currency writers—the paper in circulation is not founded on a metallic basis, and considerable difficulty will now, I apprehend, be experienced in restoring matters to their proper position.

"Revocare gradus—hic labor, hoc opus est."

It is to be hoped, however, that when the prospects of the trade are more fully developed and confided in, men of real capital and stability of judgment will come forward as purchasers, and hold the scrips, until the pigs they represent are, from time to time, swallowed up in the usual course of consumption; or the Scotch ironmasters themselves should relieve this disreputable state of the market by buying back these prospective delivery orders, with the money they have so illegitimately obtained for them, and thus retrieve the error they have committed. Although the cause of this re-action—speculative pigs being sold at 30s. per ton below the maker's price—is thus acknowledged, the effect of the temporary despondency has been, to give rise to various rumours and speculations with regard to the stability of the trade in general, unfounded indeed, and sometimes ludicrously absurd, but which, simply from their constant iteration, may acquire undue importance, unless timely exposed. I am, however, in hopes that the facts and arguments derived from statistics, which I shall now adduce, will enable any person, tolerably conversant with the trade, to form a pretty accurate opinion of its future position and prospects.

I estimate the average annual make of the kingdom, for the past few years, as 1,333,000 tons of crude iron. I calculate, that of this 452,000 tons was foundry iron, and 878,000 tons forge, the latter representing, in its manufactured results, 601,000 tons of malleable iron, which, with the foundry pigs and castings, gives a total of 1,053,000 tons leaving the manufacturers' hands.

Taking the exports of the year ending Jan. 1, 1844, as a basis (the returns not being completed for last year), we shall find that they show 182,000 tons of foundry pig, castings, and hardware; and 293,000 tons of wrought iron (including tin plates)—together 475,000 tons, leaving for home consumption 270,000 tons of foundry, and 308,000 tons of wrought iron—total 578,000 tons. I have no objection to add 80,000 tons per annum of wrought-iron and castings, representing about 100,000 tons of crude iron, in estimating the make of the present and succeeding years, though I am not of opinion that such an increase will accrue for a longer period; this would bring the quantity of available iron for home consumption, on the foregoing basis, up to 658,000 tons; but it is an important fact to bear in mind, and one that simplifies the consideration of the subject most materially, that it is only the estimated increase of 80,000 tons that need much occupy our attention. I think it will be at once admitted that, comparatively, no very considerable stocks of iron accumulated in the country, beyond those usually requisite, during the past five years, an era generally of extreme depression in almost every branch of manufactures and commerce, and when the annual construction of railroads here did not exceed 150 miles—whereas in future the average make of railroads seems likely to be seven times that quantity for this country alone, without estimating the demand for similar projects for those countries which had not hitherto commenced them—viz., Spain, Portugal, Italy, India, Canada, &c., but which are now compensating for their former lethargy; and which may be left as a set off against any possible falling off of our exports to other countries, in consequence of the advance of price. This last surmise, however, I conceive to be unsustained by former experience, and at variance with the results of a careful consideration of the manufacturing position and extended wants of our several customers; and it will be perceived that our exports are so well diffused, that any, even considerable, falling off in some of the estates, would not materially affect the whole. I will here annex a short summary of our bar and rail customers in 1843, as exemplifying this:—

Russia	*Tons* 10,963	East India and Ceylon	*Tons* 23,587
Denmark	10,895	China	4,645
Prussia	12,147	Australia	2,432
Germany	15,647	Canada, &c.	7,012
France	4,532	America	21,457
Portugal, Azores, and Madeira	7,240	Sundries	42,743
Italy	15,912		
Turkey and Central Greece	3,561	Total	198,773

At the moment of writing this, I have not access to the detailed returns of the exports of pig-iron, &c., for that year, or I should have preferred giving the particulars of those also, to complete the view.

With reference to the quantity of British and Irish railroads now decided on, it is difficult, in many instances, where the length is not stated, to arrive at an accurate knowledge of it; but, upon a near estimate, I find that the Board of Trade have passed, and virtually agreed to by postponing (the latter forming but a small proportion), about 3200 miles of railway; and this is independent of 600 or 700 miles, for which prospectuses have been issued this year, and which seem likely to be further added to. We must also take into account 797 miles, for which acts were obtained last session, and for which, although some of the rails were secured last year, they were almost entirely to be *made* this year; or, otherwise, the foreign rail contracts, standing over from last year unexecuted, will more than counterbalance any proportion of rails for this 797 miles, which could have been made prior to 1844. I will, however, in my estimate of probable demand for our railroads, during the next four years, only assume a construction of 4000 miles, leaving, therefore, out of the question, the recently, or, in future, projected lines.

English, Scotch, and Irish roads, 4000 miles, at 270 tons per mile, (including rails for partings, stations, and stock	*Tons* 1,080,000
Chairs, 4000 miles, at 80 tons per mile	320,000
All other iron for railroad purposes, engines, &c., at 130 tons per mile	520,000
Repairs of, say, 2000 miles, or 500,000 tons of rails now laid down, at 8 per cent. per annum—four years	160,000
Total for Great Britain and Ireland	2,080,000
For New Countries.	
Spanish and Portuguese lines projected, and chiefly arranged for, about 1000 miles, at, say, 350 tons per mile	*Tons* 350,000
Italian railroads, at least 300 miles, at 350 tons per mile	105,000
Total	2,535,000

I have left India out of the consideration, where it is stated, on good authority, that the East India Company are planning a system of lines of immense extent; or Canada, where a railroad of some length is contemplated, or the increased demand from any of those countries, whom we have hitherto supplied with iron for their roads, and where the great extent of projected new lines has been already made so public, as to prevent the necessity of dwelling further on the matter. Italy has lately applied in England for upwards of 20,000 tons of rails, and Germany has purchased of us, for delivery early in 1846, at 13*l.* 5s. per ton in Wales, being a considerable advance on current rates. The large additional quantity of pig-iron required for France is a matter of notoriety, as well as the prospect of the duty be taken off there; but the effect of this we can also afford to omit.

With reference to the improvements in Spain, the following extract from the speech of the Minister of the Interior, as given in the *Journal des Chemins de Fer*, of the 26th current, will be interesting, showing the *animus* which is likely to impel them there, and that the railroads are not only projected, but contracted for extensively, by responsible French and

English houses, with a prospect of much greater progress:—"On a parlé de chemins de fer, eh bien ! je me félicite de cette occasion d'annoncer à la nation, du haut de cette tribune, que l'établissement de ces chemins de fer, qu'on regardait il y a quelques mois en Espagne comme un rêve, s'est déjà converti en une espérance des mieux fondées. Des maisons respectables de France, d'Angleterre et de Belgique, dont le crédit nous est officiellement garanti par nos ambassadeurs, nous ont fait des propositions fort importantes pour la construction de chemins de fer, offrant de déposer en garantie des sommes considérables." Then, after alluding to the Madrid and Saragossa, Pampeluna and the French frontier, Madrid and Cadiz, Aviles and Leon, lines, he adds:—"Il y a encore plusieurs autres compagnies qui nous ont présenté aussi des propositions." And, in the same journal, of the 15th of March, it is stated—alluding to the line between Madrid and Cadiz, contracted for by the Paris firm of Laffitte and Blount—that all the materials may be imported *free of duty*. Hitherto the consumption of English iron in the Peninsula has been quite insignificant, the duty on importation being enormous.

It has been asserted, and with apparent plausibility, that the great increase in the price of iron will have a most injurious effect on our exports; in answer to which it will only be necessary to appeal to the statistics of those years when prices approximated to the present, and a nearly similar position of the trade was exhibited—viz., a sudden and extensive rise, after long-continued depression. Annexed is a table of exports during 1834-5-6-7-8 and 9, and the average annual prices of merchant bar-iron (as a criterion), taken from Messrs. Jevons's highly useful circular of February last, issued from Liverpool :—

Years.	Exports of iron. Tons.	Average prices of merchant bar-iron at Liverpool.
1834	174,000	About £7 5s. per ton.
1835	219,000	£6 5s. to £8 5s.
1836	214,000	£10 10s. to £11 10s.
1837	208,000	£10 5s., £7, to £9 15s.
1838	271,000	£9 10s. to £9 15s.
1839	270,000	£10 5s. to £9 10s.

The present selling-prices of similar iron in Liverpool, being 9*l.* 10s. to 9*l.* 15s., is below the average from 1836 to 1839. It will be observed that, excepting some natural fluctuations, the exports steadily increased, having advanced nearly 100,000 tons from 1834. It must, however, be admitted that, *for a time*, the effect of sudden and extensive rises of prices undoubtedly prejudices the exportation. A period of firmness in the market must elapse, before foreigners can be satisfied as to its permanent stability, and a still greater delay occurs before shipments can be effected, on account of the exporters having to wait for authority from their correspondents abroad to give the successive advances, which, ere it arrives, is useless, from additional rates being demanded, and an interval for another exchange of letters must elapse. Such has been the tenor of our American correspondence for some months, until the last packet brought numerous orders, for the first time giving authority to purchase at the current rates of the day. Once get confidence established, as to the maintenance of rates, and little difficulty will be experienced or injury caused; it is unmeaning vacillation that is so much to be deprecated. It is undoubtedly true, that nothing can be more injurious to the interests of all concerned, than to force up the trade to a high pitch, when any doubt can exist, as to its being based on firm grounds, as the reaction, or even a feeling of unsteadiness, has a baneful effect on mercantile transactions; but, on the other hand, it is equally preposterous, when there is a clear prospect of an unequalled demand, from any indecision or want of stability, for the makers to lose the benefit of such prices, as, from their long-continued losses and hazardous trade, they are equitably entitled to; or to sacrifice to foreigners, perhaps 3*l.* per ton on all our exports, or 1,500,000*l.* of national resources, not only without sufficient cause, but when all reasoning seems to point out a different course. The anticipated increase of new works, respecting which the most unfounded rumours have prevailed, should be looked into with the same closely scrutinizing view that the whole subject demands. A disinclination to introduce into a public paper the affairs of private individuals, prevents my alluding further to the information I have obtained, with regard to the new furnaces contemplated in Scotland (which district seems to have attracted the greatest attention), than to say, that the reports current are grossly exaggerated, both as to number and the time in which they can possibly be at work.

I would recommend parties contemplating engaging in this trade, first to investigate the losses that have arisen in iron works—and that, too, during an average of very fair prices—in Wales, Staffordshire, and Scotland; a letter from an ironmaster in the latter district, written lately, states —"We are now getting back the capital, we have been handing over to the public for the last few years, for the prices realised then did not meet the cost of production, and it will take a long continuance of good prices to effect this." With reference, also, to foreign works, it will be found that a considerable advance of rates is equally requisite with ourselves. Very heavy losses have been sustained in iron-making of late years abroad, and it is notorious that, in 1839, a year of very remunerative prices here, the Belgian iron-works were in a deplorable position.

It was my intention here to have summed up the various facts and arguments adduced in this letter, and to have pointed out what a wide margin remained, without much affecting the deductions, for any inaccurate or over-sanguine estimates; but the great length this has reached, warns me to desist. Enough, however, has, I think, been urged, to prove that the iron-makers are warranted in making a stand for such a scale of prices, as will enable them to provide for the heavy advances of wages, obtain a liberal profit for their current manufacture, and reimburse themselves for the losses of past years. PROMETHEUS.

April 30, 1845.

THE IRON TRADE.

TO THE EDITOR OF THE TIMES.

SIR,—The remarks contained in my former letter, which you found room for in your columns last month, seem to have made some impression upon the minds of the speculators in iron, while the trade itself has run counter to my sentiments, and, as if determined to do itself the utmost injury, fixed a rate of prices which they cannot expect generally to obtain, as the consumer cannot afford to pay it. From the observations in high places, as well as the changed tone of the *Mining Journal*, I doubt not the truths I advanced will sink yet deeper into the general mind, and lead eventually to those desirable results which are involved in the maintaining and securing a lengthened, steady, and profitable trade both to the consumers on the one hand, and to the ironmasters themselves on the other. Shortly after the appearance of my letter, a correspondent of the *Mining Journal* set forth a statement to show that the actual requirements for the present and ensuing year will exceed the power of supply by the enormous amount of 500,000 tons in each year. If this position should at all approach the truth, then, indeed, the whole of the sudden and enormous advances are truly and firmly based; and it becomes, therefore, a question of some moment, and worthy of examination, how far such a view may be relied upon to govern the judgment and determine the price. Without fear of contradiction, and appending my proofs, I venture the assertion, that it is one of the most common, as well as one of the easiest, operations of an active and sanguine intellect to set forth statements in figures and base arguments thereon, which give internal evidence of interest, self-imposition, or ignorance of effects from given causes; but which, if as put by the writer alluded to, from their serious and startling character, and the enormous deficiency of supply prognosticated by him, are apt to lead away the sober judgment, so that the dream bears the full appearance of a reality. From these causes, the effect upon the understanding becomes not unlike the feelings said to arise under the indulgence of the opium eater—delightfully soothing and enchanting while the power of the drug shall last, but ending in painful, agonising, and destructive sensations when the deleterious stimulus has lost its effect. It is one of these day-dreams in which the writer in question has made his calculations; and, substituting positive assertion for the more modest appellatur "if," he has launched into statements of figures until he reaches the conclusion that the deficiency of supply of iron for the general requirements reaches the enormous amount in round numbers of 500,000 tons for each year. In order to make this important question as clear as possible, I propose first to give the statement of the writer in the *Mining Journal*, and afterwards that which appears to me the more reasonable, giving him the full benefit of his own data, which is sufficiently near to the truth for our argument. His statement is the following :—

	Tons.
The make of pig-iron for England and Wales in 1844 was	856,000
For Scotland	354,000
Total for the year	1,210,000
Add increase for 1845	120,000
Total probable make for 1845	1,330,000

CONSUMPTION FOR 1845.

	Tons.
For 2000 miles of railway contracted for, 1000 miles for 1845, and 1000 miles for 1846, taking 250 tons per mile for rails	250,000
Add loss, one-fifth, in conversion from pig-iron into rails	50,000
Add for chairs for 1000 miles	70,000
Ditto, for loss in manufacture	3,500
Iron for railways in progress and passed in the session of 1844	150,000
Iron for waggons, &c., computed from inspectors of railway companies' accounts, 300 tons per mile, for 1000 miles	300,000
Exports in 1844, 460,000 tons, say from increase of railways abroad, and remission of duties on the continent, &c., with 40,000 tons beyond 1844 for 1845..	500,000
General consumption in Great Britain (exclusive of railways) in bars, castings, hardware, &c.	480,000
Grand total of consumption	1,803,500
Probable make	1,330,000
Making the annual deficiency to be	473,500

At the first glance this statement appears clear, reasonable, and just; but it is obvious, upon examination of the actual state of the prospective demand, that it must be taken into the account that of the very numerous public works now propounded and submitted to Parliament, comparatively few will obtain the sanction of the Legislature in the present session, many already are defeated on the Standing Orders, rivals destroying each other, and others merely got up as the ground for gambling and speculation, which are never intended to be completed, whilst those which shall have the good fortune to obtain their Acts, will require at least from three to five years in their execution. The war of interests in railways is only commencing, existing lines using every effort to protect themselves from future competition, new lines rivalling each other in every direction; so that all the precautions taken by the House of Commons in the last session to prevent unnecessary and extravagant expenditure in the needful preliminary inquiry into the merits by the powers given to the Board of Trade, hoping thereby to moderate and check an acknowledged and dreaded evil, will be almost, if not altogether, rendered nugatory; and, judging from the present aspect of the several hostile parties, the expenditure of this year will exhibit an amount altogether frightful, and which no former time could display, dissipating a good portion of that loose capital invested by many persons too eager to engage in new schemes, and which so many new-fledged directors will not hesitate to spend, seeing that so small a proportion of the deposits comes out of their own individual pockets. If, therefore, we are to become blind to the facts that the great public works, such as are admitted to proceed, will extend over a series of years, giving time and opportunity for the supply not being condensed in the way set forth in the preceding calculation —if we are to allow that the effect of high prices is to narrow consumption, diminishing the power to purchase as well as the will to buy—and if we are to admit the great doubtfulness of the majority of the projected works ever reaching maturity, the legislative difficulties, the conflicting interests, and the innumerable obstacles to be overcome—then, and not till then, are we justified in arriving at the conclusion so smoothly and readily reached by the expounder of the calculation given; and I put it to the common sense of the public, whether there are not sufficient grounds for pausing in their judgment, and deprecating that career of speculation so universally prevailing, which has always had, and which, from its very nature, must have again, the most depressing, if not dangerous, effects upon the body politic, and ought, therefore, socially and strongly, to be opposed, and, if possible, moderated. As opposed to the preceding calculation, and in order to show how easy it is to alter the aggregate results from statements in figures, and from a conviction that it will approach nearer the truth, I make the following calculation, while I take the power of probable production exactly at the quantity given in the preceding account :—

	Tons.
The make of pig-iron for 1844	1,210,000
Add increase for 1845	120,000
Total	1,330,000

PROBABLE CONSUMPTION.

Assuming that 2000 miles of railways will be necessary, the more reasonable period for completion would be four, and not two, years, which, at 250 tons per mile for 500 miles, would take for 1845	125,000
Add one-fifth for loss in conversion	25,000
For chairs	35,000
For loss in manufacture, 5 per cent.	1,700
Iron for railways already contracted for should not be allowed, as it is provided in the above, and the stock held should meet it.	
Iron for waggons, &c., computed as approximating the weight of rails and chairs	150,000
Export for 1844, computed at 460,000 tons, being reduced to one-half from enormous prices encouraging foreign make, and otherwise from foreign inability to buy, already proved in the first three months of the year (*see* the diminished weight entered from the different ports), making the whole quantity only	230,000
The general consumption of the home market (exclusive of railways) in bars, castings, &c., diminished one-third from high prices, other materials being substituted for iron; estimate of 1844, 480,000 tons, one-third off	320,000
Grand total consumption	886,700
Probable make	1,330,000
Making an excess of supply for 1845 of	443,300

I am ready to admit that a good deal of odium attaches to any party advancing this less flattering calculation, but, however unpalatable, it contains a large portion of truth. Individual immediate interests may deny it, or not, while I am persuaded that to fan the flame of the delusion is the most short-sighted policy, and unworthy of an enlightened period. To grasp at a short and present advantage, and not to look beyond the moment, are not the principles of experience; while it must be the conviction of every thinking mind, that by the prospective convulsion, commensurate with the excitement, the masses—that is, the mechanics and labourers—who, amidst the excess of prices of wages, are not saving, will, when the revulsion appears, be reduced to distress and despair, to fasten again, as paupers, upon the fixed property of the country. I am not one disposed to be an alarmist, nor am I opposed to just and legitimate enterprise, nor, least of all, am I one that would attempt to cramp or stifle the energies of a great people, whose intelligence must alone convince them of the propriety of moderation in all things; but the sudden and unnatural advance in prices, the amazing amount of plans which have sprung up from the active genius of the nation, cannot but be viewed as a strong ground for advising caution and circumspection as the highest wisdom and as our best security. I know the opposition and the difficulties which this reasoning may meet with, the sophisms and false premises on which the contrary may be maintained, and the complication which surrounds the question; but, knowing that your influential journal has adopted enlarged and extended views upon these things, I leave it, therefore, in your powerful hands. JUSTUS.

April 21.

SIR,—In the *Times* of Saturday last is a long letter from "Justus," which chiming in as it does with those lugubrious warnings which have lately been given from a higher quarter, derives a weight which it would not otherwise carry. If the writer had confined his observations to a correction of the supposed errors in the *Mining Journal* to which he refers, I should have been inclined to give him credit for disinterestedness, whatever I might have thought of his accuracy; as it is, I am tempted to doubt both. To take his two objections:—1. Over speculation. That a great deal of money will change hands in the purchase and sale of railway shares, is most true—the greater part of this evil, if evil it be, has happened already—more will certainly take place. But it never seems to have occurred to the alarmists on this subject, that there is this great difference between 1825 and 1845—that in the former year any project, however monstrous or improbable, which entered into the head of any person anxious to have a secretaryship, or of any solicitor anxious to have a joint-stock client, was hurried into existence and operation, at the mere will of these two parties, under the colour of protection from the names of persons as directors, but who were in truth either their tools or their dupes. Whereas, in 1845, in the instance of railway companies, the experience of 1825 has forced upon projectors the necessity of having as directors, men of respectability, wealth, and business knowledge—the necessity of Parliamentary notices, and the expiry of a certain amount of time before anything can be done—the preliminary inquiry by the Board of Trade—the preliminary inquiries by the committees of the House of Commons (the standing orders committee, and the committee on the bill)—and, finally, the discussion of the bill in the house, which are all so many clogs on the ardour of the original projector, and so many steps of protection to the subscribers, as to assure the latter, and the country at large, that every railway which receives the sanction of Parliament, is, in all human probability, one which should be formed, and which will be remunerative. All these were wanting in 1825. Lord Brougham's ambition to be considered the wisest of his generation, has not forsaken him on the present occasion, and has tempted him to speak in a very safely prophetic spirit. If there should be a crisis, such as 1825, then he will have foretold it; if there should not, he will congratulate the country on its prosperity, and the country will not be in a humour to go back upon his lordship's defective prophecy. To say that there was a crisis in 1825, and, therefore, that there will be one in 1845, without inquiring as to the correspondence in circumstances of the two periods, is the old story of the river in Macedon. Now, as to the inaccuracy of "Justus's" statements. He admits the probable make of iron for 1845, to be, as stated in the *Mining Journal*, 1,330,000 tons.—But he quarrels with the amount of consumption there stated upon two grounds—1st, that all the railways in project will not be authorised, and if they are, their consumption will go over a period of four years, and not two;—2d, that the exportation and home consumption will be curtailed in consequence of the great rise in prices. To take the second of these first, I am inclined to think there is much truth in this objection. It seems probable, to say the least; and if the knowledge and disinterestedness of "Justus" were as undoubted as I think they are both suspicious, I would be inclined to admit the objection to the full extent to which he states it. However, I will against my inclination do so.—The consumption for exportation thus reduced, he states at 230,000 tons; home consumption at 320,000.—"Justus's" other objection, however, is founded on a palpable blunder, for the items are all evidently upon existing contracts, which must be carried out, whether the railways are authorised or not; the whole of the contracts, however, which relate to railways not yet authorised, have been, I believe, made by companies who are as certain to get their bills as anything can be which has not actually happened. These items, therefore, are not subject to "Justus's" deduction, and must stand as in the *Mining Journal*. Their aggregate is 823,500 tons. The consumption, therefore, for 1845, even allowing to the full extent, "Justus's" deduction for exportation and home consumption from rise in price, will be 1,373,500 tons; and more than the make of that year, by 43,500 tons—leaving out of the account the increased consumption to be created by railways which have yet to be authorised, or which the projectors have not felt so sure of being authorised as to hazard previous contracts. A SHARE HOLDER.

THE LATE EXPLOSION AT WEST MOOR COLLIERY.

SIR,—In your excellent Journal of the 26th inst., I observe a letter from a "Looker-on," commenting upon the late unfortunate accident at West Moor Colliery, and also reviewing generally the condition of the northern coal mines. I apprehend there can be no right-thinking person, who will not at once agree with "Looker-on" in his just remarks, on the misery which must necessarily be caused by these explosions; and were scientific men, like himself (as he evidently is), seriously to consider the subject, I have no doubt that much good would arise. I cannot, however, but regret that "Looker-on" has marred the effect of many of his well-intentioned observations, by a style of writing, calculated rather to excite temporary feeling, than to treat the subject in that calm and dispassionate manner, which its importance so much demands. As regards the "West Moor" inquest—the jury having returned a verdict, that the explosion was purely accidental, I think should be satisfactory to every reasonable mind, and I feel greater confidence in stating this, as it cannot be unknown, that coroner's juries in the present day are not disposed to hurry over inquests, with that "indecent haste" insinuated by "Looker-on"—it is only necessary to refer to a recent calamity at Messrs. Samuda's works, when a verdict of "manslaughter" was returned against the engineer; and other cases might be adduced. Every superintendent of a mine is fully alive to the fearful responsibility devolving on him, and that he is liable, should any neglect be proved, to be indicted for manslaughter. There is only one point in connection with the "West Moor inquest," which requires to be remarked upon—it is respecting the use of the Davy lamp in the "headways." "Looker-on" observes, "in a current which, to blow out a candle, must be five or six miles per hour, they use a Davy lamp, which passes the flame in a current of three miles per hour."

This latter assertion I do most distinctly deny; I have walked against a current of explosive atmosphere (fire-damp) in a northern coal mine, at the rate of about two and a half miles per hour, and the current itself was moving in an opposite direction at about three miles an hour, so that the actual velocity with which the flame of the lamp was impinged on, by the current of explosive atmosphere, was about five and a half miles per hour —the result was, that the fire-damp continued burning in the interior of the lamp, the flame being strongly biassed towards the side, but no explosion occurred; the operation of this current upon the lamp continued for some time, as I had walked a considerable distance, before observing that the current was explosive. I may here remark, that a current of five and a half miles per hour is never required in working places. In making the foregoing statement, I am perfectly cognisant of the fact, that the flame was passed through the Davy lamp before the Parliamentary Committee, in 1835, at, it was observed, a speed of from two to three miles per hour; but the gas used on that occasion was *common coal gas*, which, it may be observed, contains certain proportions of the olefiant and other gases. The fire-damp of the northern coal mines contains no trace whatever of the olefiant gas, or free hydrogen;* and it is, I imagine, from their absence that the flame did not pass through the lamp, under the circumstances I have just detailed. The observations of "Looker-on," regarding the order of working the various seams, do not require much attention; it is perfectly clear, that in a trade where there is so much competition, it becomes a very simple commercial question, which of the seams should be worked in the first instance—this is so obvious, as not to call for further remark. The next subject upon which a "Looker-on" proceeds to comment, is the Coalowner's Answer to Messrs. Lyell and Faraday's Report—his observations respecting the style and composition of this answer might, I think, have been spared; doubtless, there are men, even amongst the coalowners, who can write intelligibly—higher authority than a "Looker-on," has stamped this answer with a different character.

The great question, and it is one certainly of much difficulty, seems to be the sinking of additional shafts. I am here compelled to observe, that the data which a "Looker-on" has assumed, in reference to this important subject, are incorrect, and without foundation, and, consequently, his conclusions are erroneous. He states, "had the Murton and Haswell owners previously bored, they might have ascertained the condition of the subjacent strata," &c. At the Murton Colliery, where the expenses of sinking were nearly three times as great as at Haswell, a bore-hole *was* put down, previously to commencing sinking operations, and the result, upon sinking, only proves how little information can be gained by such an exploring. Perhaps a "Looker-on" is not aware, that the great difficulties to be overcome in sinking arise from large feeders of water, the quantity of which cannot be ascertained from a bore-hole. I feel surprised that his "geological" knowledge should not have taught him this very simple fact. Again, the three large pits at Murton, or Dalton-le-dale—which, by the way, he mis-states as two distinct collieries, in his haste to arrive at conclusions—were *not* sunk for purposes of ventilation, but solely for the application of engine-power, to pump the enormous feeders of water; his conclusion, therefore, "that the coal-trade reporters would have shrunk from this expense," carries with it its own refutation.

The next "fact," that "shafts are generally sunk, on an average for 15*l.* or 16*l.* per fathom," resembles the case of a builder, who, on being requested to furnish an estimate for a dwelling-house, made his calculations for the labour only, forgetting that the materials must be purchased. The sinking of a coal-pit is a parallel case; and I beg to state, from practical experience, that the mere labour of sinking constitutes less than one-tenth part of the entire cost of winning to the seam of coal. Perhaps this may be rather startling to a "Looker-on," but the fact is undeniable.

There appears to be great diversity of opinion regarding the number of shafts necessary for ventilation; but the question must resolve itself, ultimately, into this: What quantity of air can be circulated through the passages of the mine? There is a practical limit to the size of air-channels in mines; and it is clearly useless extending the size of the shaft, which is merely a continuation of the channel, beyond this point. The great, and I might almost say the only, danger in coal-mines arises from sudden issues of gas, which cannot, of course, be under control; and the greater the quantity of air circulating, the more violent will be the explosion. Could it, by any means, be contrived, it would be highly desirable, in the event of a sudden discharge of gas, to stop the supply of air, so as to prevent an explosive mixture being formed; but, unfortunately, the issue is, in nearly all cases, so sudden and unexpected, as to prevent the possibility of applying any measure of this description.

"Men, not measures," seems to be the motto of a "Looker-on;" he descends from criticising the Coalowners' Report to a personal attack on the reporters. How far this may show the strength or weakness of his argument, I am not prepared to state. I do, however, with all humility, submit, that important questions, like those under discussion, should be argued on their merits, and without reference to personalities; and I am strongly inclined to think, that the right-judging public will, ultimately, be of a similar opinion. A. B.

Durham, April 28

STRAY PARK MINES—MR. HUMPHRY WILLYAMS.

SIR,—Your remarks, in the *Mining Journal* of last week, may appear to those who are ignorant of the circumstances very conclusive, as affecting the character of Mr. Humphry Willyams, who, it would appear from the representations made, has been guilty of misconduct, such as no honourable man could bear under. He will, doubtless, write to you, and his letter may preclude the necessity of the insertion of this hurried scrawl; but, having an intimate knowledge of that gentleman, I cannot allow, for a moment, a stigma to be attached to his character, which I feel satisfied he does not deserve. It would appear, that the adventurers in Stray Park and Camborne Vean Mines are annoyed, because Mr. Humphry Willyams took to himself the adjoining sett of Wheal Francis. Now, in this I can see no ground for complaint, inasmuch, that if the Stray Park adventurers would have fairly worked the sett, and applied a sufficient capital to such purpose, I do not, for one moment, believe that Mr. Humphry Willyams would have thought of taking the sett; and, as it is, I would ask these gentlemen, whether they have any grounds for saying that they are precluded from taking an interest in the mine, because, I am satisfied, that gentleman would be glad of their co-operation? I have only, in conclusion, to express my firm conviction, that Mr. Humphry Willyams is a gentleman far too honourable—perhaps, more so than those from whom you acquired your information—to be guilty of any act which might reflect on the character of Cornwall, which, I hope, will ever be sustained and maintained by ONE AND ALL.

[In noticing the letter of our correspondent (who does not, however, give his name), we do, as far as lies in our power, full justice to Mr. Humphry Willyams, who, we regret, has not thought proper to answer the article which appeared in our last Number. "Conscious innocence" doubtless prompts him to this course; but we would submit, he ought not to be regardless of the opinions of others, more especially where public attention is directed to matters which, at least, require explanation, and where a charge is brought directly, of so much moment as affecting character as the present.]

[*For continuation of "Original Correspondence," see* p. 176.]

* Dr. Turner's analysis of fire-damp, from seven seams of coal, in Northumberland and Durham.—*Transactions of Natural History Society of Newcastle upon-Tyne*, 1836.

Mining Correspondence.

ENGLISH MINES.

BEDFORD UNITED MINING COMPANY.

April 28.—At Wheal Marquis, we have made but little progress in the seventy fathom level cross-cut south during the past week, the capels being exceedingly hard; several small branches of good ore have been met with, the which are very kindly, and justify the most sanguine expectations. The lode in the fifty-eight fathom level east is two feet wide, composed of spar, mundic, and ore; there has been no lode taken down in this level west since last report. In the forty-seven fathom level west the lode is about eighteen inches wide, composed of spar and mundic, with stones of ore in places; the lode in the stopes, in the bottom of this level east, is two feet wide, and worth 15*l.* per fathom. In the deep adit level the lode is eighteen inches wide, composed of mundic and spar. At Ding-Dong, there is no important alteration in Thomas's engine-shaft or the twelve fathom level east, the lode at both points of operation being two feet wide, and unproductive. At Wheal Tavistock, the lode in Phillips's engine-shaft is two and a half feet wide, composed of gossan, spar, and ore, good saving work. At Delve's Kitchen, we have nearly completed the clearing of the adit level on to the supposed junction. In the shaft on one of the newly-discovered lodes the lode is three and a half feet wide, composed of gossan, spar, iron, and good stones of ore—altogether, a very kindly lode indeed. We weighed at Morwellham, on Friday last, March ores, 111 tons 13 cwts. 2 qrs., and sampled April ores, computed 110 tons. JAMES PHILLIPS.

COOK'S KITCHEN MINE.

April 26.—We have to day cut the wall of North Tincroft lode, in the seventy fathom level cross-cut from flat-rod shaft, but, of course, cannot yet say anything of its quality. Eudey's lode is not yet cut in the ninety-two fathom level cross-cut. The 170 fathom level is set to drive west on Chapple's lode, and there are about ten fathoms to drive to come under the present end of the 160. In the 160 fathom level the lode is twelve feet wide, worth 80*l.* per fathom; we have set to stope east and west from the cross-cut, by eight men, at 4*l.* per solid fathom. The part of the lode we are carrying in the 140 east is three feet wide, worth 6*l.* per fathom; this level is not holed to the winze, having yet a few feet to drive. We have set a cross-cut to drive north at the 160 fathom level to cut Dunkin's lode, which is heaved by the cross-course, and have about fourteen fathoms to drive through ground worth about 50*s.* per fathom. We are still proceeding with our cross-cut south from Rogers's shaft, but have not yet cut the lode. We sold yesterday about twenty tons of tin, amounting to nearly 900*l.*, though the water has been very slack for our stamping power lately. You will see from our setting paper that the stopes on North Tincroft lode, and also on Eudey's lode, are now set on tribute. A. EUDEY.

UNITED HILLS MINING COMPANY.

April 29.—In Williams's shaft no alteration for the past week. In the eighty fathom level, in the eastern end, the lode is five feet wide, two and a half feet on the north part good ore; in the western end the lode is three and a half feet wide, producing stones of ore, but not rich. In the seventy fathom level, in the eastern end, the lode is three feet wide, two feet on the north part ore of good quality; in the western end the lode is four feet wide, one foot ore of average quality; in the winze the lode is two and a half feet wide, good ore; we are not carrying all the lode in this winze. In the sixty fathom level, east of Harper's winze, the lode is three and a half feet wide, two feet good ore; east of eastern shaft the lode is three and a half feet wide, two and a half feet ore of fair quality; east of James's the lode is five feet wide, three feet on the south part ore of average quality; the lode in the winze is three feet wide, two feet good ore. In the fifty fathom level cross-cut the ground is a little more favourable for driving. At Wheal Sparrow, in the fifty fathom level, eastern end, the lode is three feet wide, producing but a small quantity of ore; in the western end the lode is two feet wide, with but little ore. In the forty fathom level no alteration in driving east and west since last reported. In the thirty fathom level the lode is two and a half feet wide, one foot on the north part ore of average quality. T. TREVENEN. R. WILLIAMS.

WEST WHEAL JEWEL MINING ASSOCIATION.

April 28.—The ground in Buckingham's engine-shaft, sinking below the 100, is very hard. The 100 east, on Wheal Jewel lode, is two and a half feet wide, worth 6*l.* per fathom; in the 100 west, on ditto, the lode has not been taken down in the past week. In the eighty-five east, on ditto, the lode is two feet wide, worth 4*l.* per fathom; in the eighty-five west, on ditto, the lode is eight inches wide, unproductive. In the seventy west, on ditto, the lode is one foot wide, containing occasional stones of ore. In the winze sinking below the forty-two, on Buckingham's, the lode is worth 4*l.* per fathom. In the thirty east, on Morcomb's, the lode is two and a half feet wide, promising. In Wilkinson's engine-shaft, sinking below the fifteen fathom level, the lode is without alteration since our last. S. LEAN. R. JOHNS.

GREAT WHEAL MARTHA CONSOLIDATED MINES.

April 26.—We beg to hand you our report of these mines. The engine-shaft, at the old mine, is sunk 10 fms. 2 ft. below the seventy fathom level, the lode in which is still hard, but it contains much more spar and mundic than we have seen in it for some time past; it is, consequently, our intention to sink it about six feet deeper, then commence cutting through the north part of the lode. The north wall can now be seen in the seventy fathom level, where the lode is at least sixteen feet wide, presenting the same appearance as last reported. The lode in the sixty east is five feet wide, containing hornstone, copper ore, mundic, with the same quantity of water issuing from it; this, together with a decomposed slate on the foot-wall, with friable quartz resting on it, are favourable indications; the stopes in the bottom of this level west are producing a great deal of mundic and stones of ore, but they are not rich. We beg to refer you to our report, March 29, in which we recommended extending the forty fathom level west, in consequence of having opened on a vein of some promise, traversing nearly north and south, which will, probably, be found to have intersected the main lode at about twenty-five fathoms west of our present workings; we have, therefore, commenced driving on course of the lode in that direction. In the new mine, the lode at the ten fathom level east is about six feet wide, composed of capel, with an increase of mundic, spotted with yellow copper ore, presenting, upon the whole, a much more favourable appearance than it has for several weeks past; the lode in the winze, sinking in the bottom of this level, is large and hard, and although containing spots of copper ore throughout, yet a floor of capel, with mundic predominating, has just made its appearance, and lessened the value of the lode in this part for the present; at the point of the level west the lode is four feet wide, containing more quartz than is usually found here, with an abundance of mundic and stones of copper oea of good quality; we anticipate, through the good appearances and indications in this level, of having a richer deposit in the twenty, when brought in a line with the orey ground, and we deeply regret not being able to accomplish our object for the present, in consequence of a deficiency of surface water. In the deep adit the lode is about seven feet wide, consisting of gossan, quartz, and copper ore; we have suspended driving the level whilst we are sinking a winze to ascertain the value of the lode at a greater depth; should the water not retard our operations, we expect (judging from the composition of the lode now seen) to be able to report very favourably of this part in our next. The lode discovered south of our workings has not been wrought on during the last week, the water being too powerful for manual labour; we propose, however, opening on it further east, where the stratum is less compact, and more decomposed. Our dressing-floors being nearly completed, we shall commence preparing ores for market with all expedition. J. PRICE. T. PENALUNA.

WHEAL CONCORD MINING COMPANY.

April 30.—We have commenced sinking a new shaft eighty fathoms west of the old engine-shaft, and twelve fathoms north, where we have discovered a very large and promising lode. We have driven an adit level to the new shaft, and, in doing so, crossed the lodes about four fathoms in depth; this lode is from twenty-three to twenty-four feet wide, containing gossan, flookan, mundic, and lead; we expect to intersect this lode in the shaft at about twenty fathoms deep. We have also erected a whim for the purpose of forking the water in the old workings until our steam-engine is erected, and have discovered some very good tribute ground; one pitch is set at 10*s.* in the 1*l.*, and we are clearing ground to set two pitches more on tribute; we are raising some excellent work, and have commenced dressing the ore for sampling. The new shaft that we have been sinking to the east is now down to take the slide in the lode, which removed it out of its course a few feet, and we are now driving to cut the lode in its regular course again, and there can be no doubt but we shall find it rich, as we have before under the same slide. We have had some of the lead ore assayed at Tavistock, and it produced 9 in 20 for lead, and 8 oz. of silver to the ton. B. ROBINS.

HOLMBUSH MINING COMPANY.

April 29.—In the 120 fathom level, west of cross-cut, the lode is ten inches wide, and worth 5*l.* per fathom; in the cross-cut south the ground still continues more favourable. In the 110 fathom level, west of Hitchins's shaft, the lode still continues to improve, being two feet wide, and worth 40*l.* per fathom; in the stopes in the back of this level, east and west of Michell's winze, the lode is fifteen inches wide, and worth 18*l.* per fathom; in the stopes west of Goldsworthy's winze the lode is ten inches wide, and worth 8*l.* per fathom; in the stopes west of Lobb's winze the lode is fifteen inches wide, and worth 20*l.* per fathom; in the stopes west of the sump winze the lode is two feet wide, and worth 38*l.* per fathom. In the 100 fathom level, west of Hitchins's shaft, the lode is one foot wide, and worth 5*l.* per fathom; in the stopes in the back of this level the lode is fourteen inches wide, and worth 15*l.* per fathom; in the winze sinking below this level the lode is twenty inches wide, and worth 34*l.* per fathom. In the ninety fathom level, west of Hitchins's shaft, the lode is one foot wide, and worth 5*l.* per fathom; in the stopes in the back of this level the lode is eighteen inches wide, and worth 26*l.* per fathom. In the sixty-two fathom level, west of Hitchins's shaft, the lode is one foot wide, producing good stones of ore. In Bray's shaft the ground continues favourable for sinking. The pitches, on the whole, continue to turn out well. We weighed at quay, on Friday last, March ores, 194 tons, and sampled April ores, computed 189 tons. T. RICHARDS.

HANSON MINING COMPANY.

April 28.—In the fifty-four fathom level west and the forty-four fathom level east the lode is small and unproductive. In the thirty-one fathom level east the lode is six inches wide. We have put the flat-rods to work to-day to draw the water from Garden shaft with the engine, and shall sink it at once; the engine-house at Treza will be finished this week. Z. WILLIAMS.

CORNUBIAN MINING COMPANY.

April 28.—The lode in the eighty-six fathom level, going west of Murray's engine-shaft, is worth about 23*l.* per fathom. In the pitch working over by eight men from the bottom of the seventy-eight fathom level the lode is two feet wide, and yielding rich work; in the eastern end at this level (eighty-six) Chiverton lode is fifteen inches wide, six inches of which is saving work. The pitches working on the north lode, at the seventy fathom level, by fourteen men, are not looking so well as noticed in last week's report. The computed thirty-three tons of lead ore, sampled on the 18th instant, is purchased at 14*l.* 8*s.* 6d. per ton (21 cwts). R. ROWE.

TAMAR SILVER-LEAD MINING COMPANY.

April 28.—In the 145 fathom level the lode is small and poor. In the 135 fathom level the lode is two feet wide, composed of capel and ore. In the 125 fathom level the lode is one foot wide, saving work. In the 115 fathom level the lode is twenty inches wide, producing some good work. In the 105 fathom level the lode is again disordered by slide courses. In the ninety-five fathom level the lode is split into two branches, composed of can and ore. In the eighty-five fathom level the lode is six inches wide, composed of can, with some ore. The seventy-five fathom level is in slidy ground. In the sixty-five fathom level the lode is three and a half feet wide, very promising work. In the winze rising in the back of the fifty-five fathom level the lode is nine inches wide, unproductive. The incline plane shaft is sunk eighteen fathoms below the eighty-five fathom level on the incline. We hope to sample, on Thursday, the 1st of May, 115 tons of rich silver-lead ore. At North Tamar the sumpmen are still engaged cross-cutting east. In the fifty fathom level the lode is two and a half feet wide, composed of capel, can, and ore, good saving work. In the forty fathom level the lode is three feet wide, producing some good work. The thirty fathom level is suspended for the present in order to sink a winze. At Wheal Hancock the shaftmen are engaged fixing a lift at the thirty-seven fathom level. In the cross-cut, at the twenty-seven fathom level, the ground is favourable for driving. JAMES SPRAGUE.

CALLINGTON MINING COMPANY.

April 28.—I beg to inform you, that we have made the necessary preparations for a ninety fathom level at the north mine, and are now cross-cutting towards the lode, in a soft and congenial channel of ground, for silver-lead ores. In the rise in the back of the eighty fathom level the lode is worth 7*l.* per fathom. In the winze sinking below the seventy the lode is worth 6*l.* per fathom; the contra lode at this level is divided by a horse of killas, producing copper ores. In the sixty fathom level we have commenced sinking a winze (this level being fifteen fathoms above the sixty at the south mine), for the purpose of communicating both mines; the level from the south mine being now nearly forward no lode will be taken down in either of these levels till this is accomplished. At the south mine we expect to cut the lode at the 100 fathom level this week. In the ninety fathom level, driving south, the lode is worth 8*l.* per fathom; in the north end we are leaving backs worth 8*l.* per fathom. In the eighty fathom level, driving north, we are opening tribute ground; driving south, the lode is producing silver-lead ores. The counthouse shaft is sunk 13 fms. below the adit, ground favourable. J. T. PHILLIPS.

CONSOLIDATED TRETOIL MINING COMPANY.

April 28.—The lode in the sixty fathom level, west of Henwood's shaft, is one foot wide, producing some good stones of ore; the lode in this end has improved since last reproted. The lode in the winze sinking under the fifty fathom level, west of Henwood's shaft, is eighteen inches wide, worth 10*l.* per fathom. The lode in the thirty fathom level, east of Henwood's shaft, is nine inches wide, composed of soft spar, mundic, and a small quantity of black and yellow ore. HENRY WILLIAMS.

TRELEIGH CONSOLS MINING COMPANY.

April 25.—In the seventy, west of Good Fortune, the lode is two feet wide, kindly, with stones of ore; in the seventy, east of ditto, the lode is eighteen inches wide, without mineral. In the sixty, west of ditto, the lode is five feet wide, two and a half feet ore, worth 30*l.* per fathom; in the sixty, east of ditto, the lode is two feet wide, producing stones of ore. In the fifty, west of Symons's, the lode is four feet wide, eighteen inches ore, worth 12*l.* per fathom; the cross-cut, north from Symons's, at the fifty, is intended to cut North Goodman's lode, to which we have about thirty fathoms; this lode has not been seen below the thirty fathom level, and that 100 fathoms east, nor seen below the adit in this part of the mine; eastward it has been very productive. In the forty-four, west of ditto, the lode is eighteen inches wide, favourable appearance, but little mineral; in the winze, below the forty-four west, the lode is small, but in the fifty under it the lode is large, and of fair quality. In the thirty-four, west of ditto, the lode is one foot wide, with stones of ore in it. In the twenty, west of ditto, the lode is twenty inches wide, kindly, with some ore. In the winze, below the adit, the lode is one foot wide, poor; Garden's shaftmen are in this end till required for the shaft. We are sorry it is not in our power to say when the new engine will work, as we have experienced so many disappointments; the engineer says he cannot get the work from the foundry, and we know they are very busy, still we think they were not ordered as soon as they ought to have been; our shaft-work has been ready a fortnight. W. RICHARDS. W. SYMONS.

LEWIS MINING COMPANY.

April 29.—We have commenced sinking Kuskey's engine-shaft under the thirty-two fathom level, ground favourable. The lode in the thirty-two fathom level west is ten inches wide, with good spots of yellow ore. The lode in the twenty fathom level west is twenty inches wide, producing good quality stones of grey ore, and very promising; we expect to hole the winze at the twenty fathom level, on the north lode, in a fortnight, where we expect to set some tribute pitches. We are also preparing the flat-rods to work on Wheal Providence lode in the eastern part of the mine. At Wheal Nutt we have sunk the engine-shaft nine fathoms under the twenty fathom level; lode is just come in the shaft, and is twenty inches wide, with some good stones of work for tin. The lode in the twenty fathom level east is two and a half feet wide, composed of spar, mundic, and spots of ore—a very promising lode; the lode in the twenty fathom level west is eighteen inches wide, yielding some tin. The south lode, in the twenty fathom level end east, is ten inches wide, producing some good work for tin. The north lode, in the ten fathom level end west, is eighteen inches wide, yielding some tin—a very promising lode. The ten fathom level end east, at the same level, is set at a tribute of 10*s.* in 1*l.* for tin. In the winze under the ten fathom level, on the north lode, we are raising some good quality work for tin. We have set the carriage of the tin stuff to the stamps at 4*s.* 6d. per 100 sacks (eleven gallon sacks). S. S. NOELL. P. EDDY.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

Account of Gold Workings.

Feb. 1 to 10—Stamps	lb	4	9	15	0	lb	4	9	15	0
„ 11— „							0	9	19	0
Total						lb	5	7	14	0

Gongo Soco, Feb. 12.—I deeply regret that we have had no improvement in the mine. At Cata Preta the poverty of the quartz lode greatly disappoints us; but at Thomas's the appearances seem more encouraging the further we advance; the water has decreased, so that we now prosecute the works both at Brightman's and at Gibbes's shafts without interruption. I trust our rising hopes may suffer no check. The miner, William Grey, wounded there is doing well. The severity of the wet season seems to have past, and we have had no rain for some days past. The washing strakes, for dressing a second time, the sand escaping from the stamps being near Mr. Allcock's house, have been called by his name. The produce, as was expected, is very small, as the sand hitherto washed is a very recent deposit; as, however, we get deeper, we shall reach that which escaped when the mine was richer, and we hope it will afford more gold; they prove, at least, that our present loss is very trifling.—W. J. HENWOOD.

ST. JOHN DEL REY MINING COMPANY.

Morro Velho, Feb. 7.—Produce for January, 9271 oits. = 89·0658 lbs. troy, from 2642 tons of ore, = 3·47 oits. per ton. You will observe, by the reduction summary, that 750 tons of previously rejected ores have been stamped during the month, and also that 605 tons of West Cachoeira ores have been stamped, which sufficiently explains the low standard per ton.

Mine Report.—During the whole of January we were suffering from the effects of our December disasters; the water was only forked in the Bahu on the 28th, and the Bahu shaft, which was injured by the fall of stone, is not yet repaired, or rather the new shaft which is to replace it in a more advantageous position is not ready. It is promised to be ready to-morrow night—at all events it will be ready in two or three days. This change in the position of the Bahu shaft will enable us to draw during a great many more fathoms sinking than would otherwise have been the case. Mr. Helmreichen mentions some forty fathoms deeper than the present bottoms, without any alteration of our existing arrangements. In consequence of building up this new shaft, it has been impossible to work the stopes underneath, lest any timber or tools, &c., should fall on the people below. These circumstances have driven us to work the stopes in the upper part of the mine, which are, as they ever were, desperately hard for boring, as Captain Verran states in his report: this is one principal reason for the small supply of ore from the United Mines. The new distribution of the working hours of the miners has likewise had its influence, but to what extent it succeeds cannot be ascertained at present: when the new shaft is at work, and all the stopes are at work, it will have a fair trial. Very large supplies of heavy timber will be required in, as quickly as possible, for the new forty-feet pumping wheel, mentioned in my diary, and for pumps in the new shaft. We have now excellent supplies of boyer iron, as the cost will show. Cost for January, rs. 20,162 $295, at 25¼d. ex. = 2121*l.* 4*s.* 10d. sterling. Of this cost, boyer iron, and carriage from Rio, come in for rs. 3839 $766.

BRAZILIAN COMPANY.

Cata Branca, Feb. 8.—The small quantity of ore lately stamped, is owing, in a great measure, to the carts out of the mine not having been properly filled from the want of stone to do so, which arises from the bad state of the hauling power. Both hauling machines will be at work I hope in about ten days, and I also expect to be then in a position to begin upon the arches and high ground when you may depend on the stamps being fully supplied. I defer till the next post addressing you more particularly in reply to your last letter.

Feb. 18.—In my letter of the 8th inst., I mentioned that I would in my next reply more particularly to your last. I now deeply regret to say, that the distressing account which I have to-day to give you, will make any detailed reply unnecessary. On Tuesday night, about 10 p.m., the mine below the deep adit was, I may say, literally destroyed by a fall of ground to an extent we shall never correctly ascertain; four lives were lost—the Englishman, John Odgers, jun., and three negroes being at once hurled to the bottoms, where they remain buried; two negroes were also much hurt; and this, wonderful, and with all thankfulness to say, was the extent of the injury incurred by those in the mine. Most providential indeed was it, that every creature was not killed; but a trifling warning only a moment before enabled all in the stulls (the relief corps just coming in) except the four unfortunate sufferers to run west; at the same time, there were twenty-nine people at work on the No. 6 bottoms under the arch; these were here left in a most perilous situation, and remained so for seven hours, as it was nearly that time before the spot they had taken refuge in could be ascertained, every light they had having been extinguished, and none could be got to them across the chasm (eleven fathoms) for a long time by the several means tried. At last, one was swung over in a kibble, in which, one by one, the men were brought away more dead than alive, and placed in safety. Here the two injured received their hurts by the rubbish, which continued to fall through the shaft in immense masses during the night.

To Captain Williams, the junior captains, and the English miners, do these men owe their lives, which were saved at the imminent risk of all engaged, who, as the falls of ground took place, were from time to time obliged to retreat westward, and the timbers of the very pieces of stull on which they stood were footed in ground perceptibly giving way at the time. It was a trying, nervous night to all, and I have publicly thanked all engaged, and have told them, I would not fail to make their most meritorious conduct known to you. Of course, in the present position of affairs, it is altogether out of the question, thinking of our again seeing the bottoms. If this sad accident had not taken place, the present water power, perhaps, would have enabled us to try three or four fathoms deeper; but my late letters have mentioned to you, how little probability there was of good resulting from so doing.

On Wednesday morning the regular corps was put to work, some on the No. 6 lode, and some on the deep adit, where, and at the Sumidoure, all continue employed. In my next letter I shall be able to write more fully on what is thought best to be done; at present, such is the dangerous state of all the ground above deep adit, that it is impossible yet to begin taking down the arches, and working the surface stopes; you will quite understand this, when I mention that we hourly expect to hear that the old hauling machine has fallen to the bottoms. E. HARDING.

Gold return for two weeks to 14th February, 9 lbs. 5 oz. 4 dwts. 17 grs.

ALTEN MINING ASSOCIATION.

Estimate of Ore for the month of February, 1845.

Mines.	No. of Men.	No. of Fathoms.	Aver. prod. per fm.	Estim. total quantity of ore.	Per cent.	Copper.
Raipas	28	23·6	3·8	90·0	5·75	5·17
United Mines	32	35·4	1·1	40·0	4·0	1·60
Ryper's	12	7·6	0·8	6·0	6·0	0·36
Mancur's	4	1·6	2·5	4·0	6·0	0·24
Quœnvig	6	3·5	1·4	5·0	7·0	0·35
	82	71·7		145·0		7·72

Mining Report, from the 8th February to the 12th March, 1845.

It is much to be regretted that the monthly copper productions should continue so low, and particularly so under the present financial state of the works. This circumstance is mainly attributable to a deterioration in the quality of Raipas ores, as alluded to, and in a great measure accounted for, in my last report. It is one of those fluctuations in mining that has been experienced on several former occasions, although not in an equal degree with the present. The result of our latter proceedings too fully confirms the deterioration in the produce of the Raipas lode to be denied; any further remarks on this subject would be merely a reiteration of the sentiments I have before expressed. On account of this month's delivery of Raipas ore to the smelting-house being confined to the smalls and second dredge, the best dredge and prills having been kept at the mine until a full cargo of each could be completed, the per centages are lower than they otherwise would have been.

Raipas.—The produce of the stopes under shaft No. 1 has deteriorated, and a greater number of hands have, in consequence, been employed on the gossan lodes, to endeavour to make up the deficiency; but hitherto, on account of the inferior quality of the ore, without the success we had anticipated. The quality of the gossan is low, but a small quantity of extremely rich prills and best dredge are found disseminated throughout the lode, which presents every indication that could lead us to expect an improvement at a deeper level. The shallow level, driving westerly, has been extremely fluctuating, sometimes on a rich gossan lode, and at others so intimately mixed with soft clay and fragments of the adjacent strata, as to materially lessen its value. No decided limits to the lode, in any direction, have as yet been found; but so much has been seen as to enable us to determine, that the present depth is not sufficient to enable us to conduct our usual mining operations with any regularity, neither does it possess the necessary qualifications to guide our future operations with any degree of certainty. We are anxiously looking forward to the return of summer, to enable us to resume our exploratory workings on a more extended scale.

United Mines.—A material improvement has taken place in the stopes on Ward's old lode, which will be further confirmed by reference to the note of ore deliveries for February. Should this improvement continue, we hope to return an equal quantity of ore this month, notwithstanding that the Easter holidays will make a difference of six working days. The 85 fathom level easterly is poor, having intersected the grit; but the 100 fathom level continues to produce an average quantity of fair dredgy work, and would, undoubtedly, leave a remunerating profit, but for the great expense at present incurred in clearing the water and stuff, and forcing air into the workings, all of which will be greatly lessened after a communication has been effected with the new perpendicular shaft, which has already been holed with a cross-cut from the 87 fathom level, leaving a further depth of about ten fathoms to be completed. About three fathoms below the present depth we expect to intersect the lode. The new lode from the cross-cut in the 80 fathom level contains good patches of ore, but is not rich; its regularity, size, and composition, hold out hopes of an improvement as we progress to the westward, and parallel with the bunches of ore discovered in the 80 fathom level some years ago.

Ryper's lode has, within the last week, also improved; the adit level has been recommenced, and a good bunch of ore intersected, but too recently to enable me to state anything of its extent, or probable duration. The stope has also improved in depth, and we are now stoping away a piece of dead ground to enable us to reach it more advantageously. The lode in the sink has increased in size, but continues without ore; should no improvement take place before the end of the month, it is proposed to drive a level for exploring the lode on its course at the present depth.

Mancur's lode has been intersected and removed by a cross-course; the level is, in consequence, driving in dead ground, for the purpose of refinding it. The new sink is on a dredgy part of the lode, which, in this part, is also irregular and contorted; the prospects, however, continue equally good.

Wilson's, in consequence of the severity of the weather and heavy water charge, has not been resumed.

Church.—Having driven the cross-cut about six fathoms, without intersecting the lode, it was considered advisable to suspend its further prosecution, until the actual run of the lode could be more accurately ascertained, and for this purpose we have now four men employed.

Quœnvig lodes continue without change. A new rise has been commenced from the back of the level on the old lode, and in the apparent direction of the ore as it rises into the mountain.

During the temporary suspension of the smelting-works, Borchgrevinck, with the smelters, has been placed at the old mine to pick over and collect the ore in the old stulls; a small quantity of good dredge, and much stamps' stuff have already been found. It was proposed to recommence some of the most promising stopes, but the quantity of ice and snow collected in the mine presented too great an impediment at this severe season of the year, and it was feared that the advantage to be gained by the ore that might be produced would not remunerate the outlay in clearing the workings. We hope and expect that the ore producing from the old stulls will at least pay the expense incurred in picking them over. In the ore dressing department we are making every preparation to enable us to commence operations as soon as a thaw will admit. S. H. THOMAS.

MINING IN THE EASTERN DISTRICT OF CORNWALL.

[FROM CORRESPONDENTS.]

WHEAL MARIA.—This week's report mentions all the ends looking as well as ever; they have sampled upwards of 1100 tons. The adventurers are about erecting two powerful steam-engines on the mine.

GREEN VALLEY.—The steam-engine has been working about six weeks in the shaft, and levels are cleared up to the fifty-seven, which is the bottom, and preparations are being made for sinking the engine-shaft. Several rich bunches of ore, which are seen in the different levels, will be now taken away. A new lode has recently been discovered, which can be seen in the bottom level, by extending a cross-cut of six fathoms.

WHEAL VICTORIA MINE, in the parish of St. Neot, about two miles west of West Caradon, is a very promising adventure, and was commenced early in

1844, since which period eight lodes of an encouraging character have been discovered, and can be worked efficiently by a comparative small outlay. The facilities are of a most favourable description. A never failing stream of water bounds the sett on the east; and backs of upwards of sixty fathoms are obtained in driving the adit level. In driving the cross-cut two small branches of rich copper ore have been intersected underlaying into the main lode, which it is anticipated will be cut in a few weeks. The mine is divided into 256 shares.

Wheal Robins.—A considerable improvement has taken place here within the past few days; the shaft which underlays on the course of the lode from the twenty fathom level is now sunk twelve fathoms under the forty-four fathom level, from whence some excellent stones of copper ore are now being raised, and as it is intended to sink to the sixty fathom level before they extend east and west on the lode, it is anticipated, from present appearances, that a course of ore will be found. About 1000*l.* worth of tin and copper ore has been sold since the commencement of the mine.

Wheal Mexico.—This sett has lately been taken up, and whatever may be the results of operations in this district, where silver is the object of pursuit, this undertaking certainly presents fair prospects—a bunch of silver ore equal, as is stated, to any which has been previously discovered in Wheal Brothers or the adjacent mines, having been met with by a "pare" of tributers. No great value, perhaps, is to be attached to this discovery, as its extent or value has not been yet proved; it, however, affords proof of the mineral deposits of silver which are found to prevail in the neighbourhood.

West Shepherd's Mine.—This mine, which has been lately resumed working, holds out favourable prospects. A water-wheel, thirty-two feet diameter by two feet in the breast, has been erected, and there is a constant supply of water, which is taken up from the adit. The requisite buildings have been erected at surface, with capstan, shears, whim, &c. The engine-shaft, which is in a valley running north and south, is sixteen fathoms from the surface. The main direction of the lodes is nearly east and west, being similiar to those of the Old Wheal Rose, or Shepherd's; they range from three and a half to four feet big; those which take the engine-shaft at 5 fms., will, in course of driving west, give full forty fathoms of backs. In the bottom level west there is a good lode of silver-lead ores; but the lode going east, although large, is not so rich as in the western end. A winze is in course of sinking in the bottom of the adit, about fifty fathoms east of the present end, where stones or rocks of ore, weighing, in some instances, 3 cwt. each, are found of good "work." The two bottom ends are in course of driving with six men and six boys, and four men are also sinking the winze. Upon getting down some fifteen or twenty fathoms deeper, it is confidently expected that the raisings will be very considerable. A meeting of the adventurers was held in the lecture-room at Liskeard, on Thursday, when a call of 2*l.* per share was made.

[*To be continued in next week's Mining Journal.*]

WHEAL ST. CLEER MINING COMPANY.

At a meeting of the adventurers in this mine, held at the office, Octagon, Plymouth, on Wednesday last, the 30th ult., Capt. Toby in the chair, the directors' report was read, which stated that the engine had been set to work on the 14th of April, and that the works were proceeding with the greatest satisfaction, that the ground continued favourable for sinking, and that the engine-shaft had been sunk since the 16th ult. five fathoms two feet. The engine performed her work well, and if the ground continued as favourable as hitherto the lodes would be seen some months sooner than was at first expected. The future cost would be about 1*l.* per 1-128th share per month, until the lodes were cut at the thirty fathom level, which would, however, be increased if operations were commenced on the other lodes. From the statement of accounts submitted for three months to the 31st March, it appeared, that the calls of 6*l.* per share received amounted to 768*l.*, while the expenses had been 930*l.* 13s. 7½d.—leaving a balance due the purser of 162*l.* 13s. 7½d. It appeared that the proprietor of Endrifton sett was willing to extend the grant from twenty-one to thirty-one years for 25*l.*, and it was resolved, that the solicitors should immediately prepare the deeds in the names of three shareholders. The report was then received and adopted, and a call of 4*l.* per share being made to pay the balance due the purser, and proceed with the works, thanks were voted to the chairman, and the meeting separated.

SUMMARY OF SALES OF COPPER ORE IN CORNWALL,

FOR THE QUARTER ENDING MARCH 31, 1845.

Date. 1845.	Place of Sale.	Average Standard.	Avr. Prod.	Average Price.	Tons of Ore.	Quan. fine copper.	Total Amount.
Jan. 9	Redruth	£103 5	7¾	£5 5 0	2997	232*l* 13*c*	£15,777 15 0
„ 23	Truro	105 9	7¼	4 18 0	2842	206 8	13,951 17 0
„ 30	Truro	104 19	7¾	5 6 6	3827	295 1	20,444 11 0
Feb. 6	Redruth	105 9	7¾	5 8 6	4271	329 5	22,987 14 6
„ 13	Ditto	105 15	7¼	4 15 6	2650	188 19	12,699 3 0
„ 20	Ditto	93 16	9¾	6 8 0	1884	184 14	12,145 12 0
„ 27	Truro	106 14	7	4 10 0	3265	227 13	15,319 10 6
March 6	Pool	104 9	7¾	5 9 6	4767	375 19	26,154 6 0
„ 13	Redruth	101 6	8	5 7 0	2670	213 15	14,317 16 0
„ 20	Truro	95 1	9	6 12 6	3450	339 6	22,762 5 0
„ 27	Ditto	108 15	6¾	4 9 0	3264	215 16	14,496 12 0
Totals				£5 12 9	33887	2809 19	£191,057 2 0

MINE ACCIDENTS.

Walmersley, near Bury.—While T. Beswick was at work in a coal-pit at Tottington, Higher End, part of the roof fell, and killed him.

Lane End, Staffordshire.—J. Booth (butty) was seriously injured by a fall of stone at one of Mr. Sparrow's Millfield Gate pits.

Bradley.—J. Etherington was killed by a fall of coal in Messrs. Scott and Foley's colliery; a fellow-workman (Wilkes) narrowly escaped a similar fate

Maesteg.—A miner, named Roderick, was killed by a fall of coal.

Bolton.—R. Schofield was killed by a fall of roof in a mine at Middle Hutton.

West Caradon.—J. Martyn was killed through the premature explosion of a blast; a comrade (R. Napp) was deprived of sight by the same calamity.

Linkinhorne.—A miner was killed by falling down a shaft.

Killingworth Colliery.—The following sums have been obtained for the families of the sufferers by the recent accident at this colliery. At West Moor, 11*l.* 15s. 7½d.; at the Parish Church, 9*l.* 2s. 3d.; at Seatonburn, 1*l.* 15s. 9d.; at Walker, 2*l.* 7s. 9d.—in all, 26*l.* 0s. 7½d.

Swansea.—On Saturday last four men working in Mr. Strick's colliery were seriously injured by an explosion of inflammable air—one (W. Thomas) has since died. We have heard that much blame is attributed to the agent, for not sufficiently ventilating the drift in which the men were working, and we trust the coroner will investigate the truth of this report.—*Swansea Journal.*

The Late Explosion of Fire Damp at West Bromwich.—Two of the unfortunate miners, a man and a boy, who were burnt by the explosion of fire damp in a colliery near the turnpike-gate at Hill Top, have died of the injuries they received. The other men who were injured by this melancholy catastrophe are, we hear, in a fair way of recovery. The incautious use of a candle in a part of the mine little frequented was the cause of the sad occurrence. The mine has since been thoroughly ventilated.—*Wolverhampton Chronicle.*

MEETINGS OF SCIENTIFIC BODIES DURING THE WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Entomological	17, Old Bond-street	Monday	8 P.M.
British Architects	16, Grosvenor-street	Monday	8 P.M.
Chemical	Society of Arts, Adelphi	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Linnæan	Soho-square	Tuesday	8 P.M.
Horticultural	21, Regent-street	Tuesday	1 P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Society of Arts	Adelphi	Wednesday	8 P.M.
Royal	Somerset House	Thursday	8½ P.M.
Antiquaries	Somerset House	Thursday	2 P.M.
Rl. Society of Literature	4, St. Martin's-place	Thursday	3 P.M.
Medico-Botanical	32, Sackville-street	Thursday	8 P.M.
Astronomical	Somerset House	Friday	3 P.M.
Royal Institution	Albemarle-street	Friday	8½ P.M.
Philological	49, Pall-mall	Friday	8 P.M.
Royal Botanic	Regent's-park	Saturday	4 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

MEETINGS OF PUBLIC COMPANIES DURING THE WEEK.

Tuesday.—Southwark-bridge Company, at Twelve for One—West Middlesex Water-Works, at Eleven—Pacific Steam Navigation Company, at Twelve—Highgate Archway Company, at One—Anglo-Mexican Mining Co., at One.

Wednesday.—Ulster Canal Company, at Eleven.

Thursday.—National Provincial Bank of England, at Twelve—Aberdare Canal, at One.

CALLS.

Wheal St. Cleer, 4*l.* per share; Harrowbarrow Consols, 5s.; Trelawney Consols, 5s.

COAL MARKET, LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Adair's Main 15—Holywell Main 16—North Tanfield 13 6—Ord's Redheugh 14—Old Tanfield 14—Taylor's West Hartley 16 6—Tanfield Moor 17 6—West Hartley 17 6—Wall's End Hilda 16 9—Killingworth 16 3—Newmarch 16—Urpeth 16—Braddyll's Hetton 20—Russell's Hetton 19 6—Stewart's 20—Heugh Hall 17 9—Leasingthorne 18 6—Adelaide 19 6—Tees 19 6—Merthyr 22 6—West Hartley Netherton 17.—Ships arrived, 19.

WEDNESDAY.—Carr's Hartley 17 6—Holywell Main 16 6—Old Tanfield 14 6—Taylor's West Hartley 17 3—Townley 15—West Wylam 15 6—Wall's End Braddyll's Hetton 19 6 to 19 9—East Hetton 17 6—Haswell 20 3—Hetton 19 9—Stewart's 20—Adelaide 19 6—Eden Hartlepool 17—Evenwood 16—Tees 19 6—Garnant Stone 22—Hartley 17—Lewis's Merthyr 21 6—Morgan's Stone 21 6.—Ships arrived, 23.

FRIDAY.—Carr's Hartley 17—Davison's West Hartley 17—Holywell Main 16—Old Tanfield 14 6—Ravensworth's West Hartley 16 6—Townley 15 6—Wall's End Bewicke and Co. 17 6—Gosforth 17 6—Killingworth 16 6—Wharncliffe 17—Eden Main 18 6—Belmont 18 3—Braddyll's Hetton 19 3 to 19 6—East Hetton 17 3—Haswell 19 6—Hetton 19 3—Lambton 19—Russell's Hetton 19—Stewart's 19 3—Whitwell 17 3—Caradoc 19—Heugh-hall 17 9—Kelloe 18 6—Kelloe (re-shipped) 17 6—Adelaide 19 3—Barrett 17 3—Brown's Deanery 17 6—Cowndon Tees 17—Cowpen Hartley 17—Garnant Stone 22—Lewis's Merthyr 21—Sidney's Hartley 17—West Hartley Netherton 17.—Ships arrived, 57.

Current Prices of Stocks, Shares, & Metals.

ENGLISH AND FOREIGN STOCKS.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Consols, Money, 98¼ ⅜	Russian, 5 per Cents., 116½ 117½
ditto, Account, 98¼ ⅜	Spanish, 5 per Cents., 30½ ¼
Exchequer Bills, 57 59 pm.	ditto, 3 per Cents., 41 ¼
Belgian, 5 per Cents., 101 2	Brazil, 5 per Cents., 88 9
Danish, 3 per Cents., 88 89	Chili, 6 per Cents., 98 100
Dutch, 2½ per Cents., 63¼ ⅜	Colombia, 6 per Cents., 15½ 16
ditto, 4 per Cents., 97⅝ ¾	Mexican, 5 per Cents., 37⅞ 8¼
Portuguese, Conv., 5 per Cents., 67 68	Peru, 6 per Cents., 30½ 1

LEEDS, Thursday.—The tone of depression which characterised the share market last week is gradually disappearing, and prices are generally higher. The Direct Northern, having been thrown out in Standing Orders, has dropped to 3¼*l.* per share, and the Midland 40*l.* have, consequently, advanced to 19¾*l.*, and the York Extensions to 17¾*l.* London and Yorks have also run up to 3*l.* pm., and though, as a through line, there is no hope for them, perhaps their case is not so desperate, as to the portion between Lincoln and York—the contest now resting between them and the York and North Midland and Midland. The Manchester and Birmingham meeting, yesterday, went off to the entire satisfaction of the directors, and the party favourable to the London and Birmingham amalgamation; the only unfavourable feature of the meeting was the announcement of the factious lawsuit, commenced by the Grand Junction; as we apprehend that it will be pretty apparent, that this is a mere "fetch" on the part of Mr. Moss and his co-directors, we believe that the very gratifying conclusion of the meeting will have its proper effect in elevating the price of the shares. The repudiating gentlemen of the Sheffield and Manchester appear to have taken nothing by their motion, except bringing down the shares 15*l.* to 20*l.*, and calling into existence a rival line by way of Matlock and Buxton, from the Amber Gate station of the Midland to Manchester. This line will be further continued by the "Erewash Valley" Railway towards London, and, as it is proposed to merge the Manchester and Buxton in the new company, on very favourable terms, we shall see both "Erewash" and "Buxtons" move up with some vivacity; and as the strength of Messrs. Hudson and Ellis is combined with the Trent Valley and Manchester and Birmingham interest, in support of the scheme, we have no fear of its success. West Yorks are at 88s. pm., Thirsks at 70s. pm., West Ridings at 4½*l.*, Dewsburys 8*l.* pm.; this last line may now be considered as safe, the promoters having arranged terms with the West Ridings.

R. B. WATSON & CO.

HULL, Thursday.—Since our last we have had a fair amount of business passing, and during the last two or three days prices have evinced a tendency to advance. Hull and Selby stock, on the eve of the meeting, is rather fluctuating, but, on the whole, firm, and the old shares higher in price.

COPPER ORES

Sampled April 16, and Sold at Tyack's Hotel, Camborne, May 1.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
North Roskear	103	£2 8 6	South Caradon	40	£4 18 0
ditto	102	7 14 0	East Wh. Crofty	119	6 0 6
ditto	98	7 14 6	ditto	74	4 13 0
ditto	92	3 0 0	ditto	55	7 2 0
ditto	86	6 6 6	ditto	54	5 3 0
ditto	85	6 0 6	ditto	45	7 10 0
ditto	84	5 11 0	ditto	20	6 12 6
ditto	77	7 13 6	Longclose	28	6 18 6
ditto	74	5 13 6	Dolcoath	97	3 7 6
ditto	72	5 2 0	ditto	77	5 4 6
ditto	68	5 5 0	ditto	58	2 15 6
ditto	63	5 3 6	ditto	46	1 8 0
ditto	62	7 17 0	South Wh. Basset	88	3 8 0
ditto	61	7 17 0	ditto	68	4 15 0
ditto	60	7 1 0	ditto	60	8 3 6
ditto	47	6 13 0	ditto	28	4 16 0
Consolidated Mines	90	7 1 6	South Roskear	58	5 3 6
ditto	73	4 5 0	Wh. Chance	75	5 14 6
ditto	70	4 19 0	ditto	74	5 6 0
ditto	69	9 15 0	Fowey Consols	110	4 17 0
ditto	65	3 16 0	ditto	91	4 7 0
ditto	64	5 2 6	Wheal Vyvyan	66	1 9 0
ditto	56	4 16 0	ditto	49	6 11 6
ditto	50	4 17 6	ditto	1	38 0 0
ditto	48	4 11 0	Grambler & St. Aub.	61	7 1 0
Tincroft	68	4 5 6	ditto	49	5 7 6
ditto	63	5 4 6	Creegbraws	85	5 5 0
ditto	57	5 19 0	ditto	16	4 5 0
ditto	56	2 5 0	Wheal Trewavas	89	5 5 0
ditto	52	5 4 6	Wheal Harriet	59	3 11 0
ditto	44	4 3 6	ditto	24	4 3 0
ditto	42	2 0 0	Godolphin	35	5 4 0
ditto	32	5 9 0	ditto	22	12 14 6
ditto	25	3 3 0	Tretoil	50	5 6 0
South Caradon	96	6 2 0	West Fowey Con.	50	4 4 6
ditto	90	5 15 0	Wh. Comfort	30	3 11 6
ditto	84	6 3 0	ditto	9	2 10 0
ditto	67	6 12 6	Wh. Clifford	37	5 13 6
ditto	57	5 17 0	South Wh. Francis	27	3 17 0

TOTAL PRODUCE.

Mines.	Tons.	Amount.	Mines.	Tons.	Amount.
North Roskear	1234	£7352 15 0	Wh. Vyvyan	116	£455 17 6
Consolidated	585	3272 4 0	Grambler & St. Aub.	110	693 8 6
Tincroft	439	1877 11 6	Creegbraws	101	514 5 0
South Caradon	434	2593 0 6	Wh. Trewavas	89	467 5 0
East Wh. Crofty / Longclose	395	2393 11 6	Wh. Harriet	83	309 1 0
			Godolphin	57	461 19 0
Dolcoath	278	955 1 0	Tretoil	50	265 0 0
South Wh. Basset	244	1247 2 0	West Fowey Consols	50	211 5 0
South Roskear / Wh. Chance	207	1121 14 6	Wheal Comfort	39	129 15 0
			Wh. Clifford	37	209 19 6
Fowey Consols	201	929 7 0	South Wh. Francis	27	103 19 0

Average standard, 104*l.* 10s.—Average produce, 7¾.—Average price per ton, 5*l.* 7s. 0d.—Quantity of ore, 4776 tons.—Quantity of fine copper, 370 tons 3 cwt.—Amount of money, 25,564*l.* 1s. 6d.—Average standard of last sale, 104*l.* 9s. 0d.—Average produce ditto, 7⅞.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Company	Tons.	Amount.
Mines Royal Company	332	£1948 17 0
English Copper Company	813	4021 9 0
Vivian and Sons	732	3419 7 5
Freeman and Co.	484	2792 17 8
P. Grenfell and Sons	758	4096 0 2
Sims, Willyams, Nevill, Druce, and Co.	818	4078 10 0
Williams, Foster, and Co.	839	5207 0 3
Totals	tons 4776	£25,564 1

Parcels. Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and e 271——Wheal Prosper 628—Carn Brea Mines 450—United Hills 331—Wheal Providenc 200—Par Consols 261—Wheal Buller 248—Botallack 231—Fowey Consols 202—Levant tchen Trenow Consols 190—Wheal Darlington 156—West Wheal Jewel 145—Cook's Ki ls 30. 107—Harvey's Dross 95—Wheal St. Andrew 47—Wheal Trenwith 40—St. Ives Conso—Total, 3632 tons.

NO SALE on Thursday week.

COPPER ORES

At SWANSEA, for sale May 7.—Cobre 109—105—104—93—60—31—100—82—80—76—54—36—21—5. Santiago 94—83—81—76—69—67—54. Knockmahon 115—114—111. Bearhaven 131—71. Tigrony 79—40—17—2. Ballymurtagh 64—39—6. Llandidno 96. Cosheen 46—22—1. Bacuranao 60. Cronebane 33.—Total, 2527 tons.

TRURO, April 29.—South Wh. Basset, 295*l.*; North Roskear, 620*l.*; Camborne Vean and Stray Park, 18*l.* 15s.; South St. George, 10*l.* 10s.; Budnick Consols, 35*l.*; Wheal Blenco, 7*l.* 10s.; Wheal Andrew and Nangilos, 45*l.*

LATEST CURRENT PRICES OF METALS.

LONDON, MAY 1, 1845.

	£ s. £ s. d.		£ s. £ s. d.
Iron—Bars..Wales..*ton*	9 10—10 0 0	Tin—Com. blocks *g*..*cwt.*	0 0— 4 5 0
„ ..London	0 0—10 10 0	„ bars	0 0— 4 6 6
Nail rods „	0 0—11 5 0	Refined	0 0— 4 10 0
Hoop (Staf.) „	13 10—14 0 0	Straits *h*	3 15— 3 16 0
Sheet „ „	14 10—15 0 0	Banca	3 17— 3 18 0
Bars „ „	0 0—13 0 0	Tin Plates—Ch., IC *i*, *box*	1 16— 1 18 0
Scotch pig *b*, Clyde	4 5— 4 10 0	„ IX	2 2— 2 4 0
Russian, CCND *c*	0 0— ——	Coke, IC	1 12— 1 13 0
„ PSI	0 0—16 0 0	„ IX	1 18— 1 19 0
„ Gourieff	0 0— ——	Lead—Sheet *k* ..*ton*	0 0—18 15 0
„ Archangel	0 0— ——	Pig, refined	0 0—19 5 0
Swedish *d*, for arriv.	12 10—13 0 0	„ common	0 0—17 15 0
„ on the spot	0 0— ——	„ Spanish, in bd.	0 0— ——
„ Steel, fagt.	18 0—18 10 0	„ American	0 0— ——
„ „ kegs *e*	17 10—17 15 0	Spelter—(Cake) *l*	0 0—22 10 0
Copper—Tile *f*	0 0—83 0 0		
Tough cake	0 0—84 0 0	Zinc—(Sheet) *m*	0 0—30 0 0
Best selected	0 0—87 0 0		
Ordinary sheets, *lb.*	0 0— 0 0 9½	Quicksilver *n* ..*lb.*	0 0— 0 4 6
„ bottoms	0 0— 0 10½	Refined Metal ..*ton*	0 0—7 2 6

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto *e* In kegs ⅛ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent.

REMARKS.

Iron—*Welsh and Staffordshire.*—Our quotations to-day are nearly similar to those of the 2d ult., the makers being firm; the demand, however, continues limited. *Scotch Pig.*—In the past month a considerable change has occurred in the price of this article, which fell from 5*l.* 10s. (buyers) to 4*l.* (sellers), at which last several thousand tons changed hands in the past week; without venturing an opinion as to the reasons which induced parties to come forward as sellers at such comparatively low rates, we know that the parcels were promptly taken up, and a re-action having commenced, we think it by no means improbable the market will rally to about the makers minimum price of 5*l.* 10s. *Swedish.*—None in first hands; good specifications for early arrival can be obtained at quotations. Steel not much in demand, but prices firm.

Copper.—Demand good, for home use; but for exportation it is limited.

Tin—*English.*—A further advance of 5s. per cwt. in past month; stocks very bare.—*Foreign.*—The entire parcel of 75,000 slabs of Banca offered for sale by the Dutch East India Company, on the 21st ult., was sold at a price equal to about 74s. per cwt. Straits sold yesterday at 75s., and our quotations, both for Banca and Straits, must be considered nominal, there being none on the market.

Tin Plates.—Steady, at quotations, but not in brisk demand.

Lead continues in very good demand; price has advanced 5s. per ton within the last two weeks; no foreign, either here or at Liverpool, except about thirty tons in each place containing silver.

Spelter has advanced 5s. per ton, the demand being rather improved and stock low.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
23	Andrew and Boscawen	23	45
96	Bell	—	10
4000	Bedford	2½	7
100	Botallack	175	500
10000	New British Iron, regis.	10	25 6
—	Ditto ditto, scrip	10	19 20½
8000	Blaenavon	50	35 40
120	Brewer	—	55
100	Bwlch Cwmerfin	20	60
5000	Con. Tretoil Mining Ass.	2½	¼
128	Cosheen	20	200
114	Charlestown	—	300
3200	Cornubian Lead Co.	3	4½
128	Comfort	—	35
2560	Cook's Kitchen	—	15½
1000	Carn Brea	15	90
1000	Callington	18	23
256	Caradon Wh. Hooper	3	10
128	Caradon Consols	45	135
256	Caradon Copper Mine	1½	5½
128	Caradon Mines	1	70
256	Caradon United	3	11
128	Creeg Braws	120	100
1900	Combmartin	5½	10
240	Craddock Moor	3	70
186	Dolcoath	—	100
1000	Dhurode	2	5
10000	Durham County Coal	45	8½
100	Dyfyngwm	130	20
128	East Pool	5	50
94	East Wheal Crofty	—	500
128	East Wheal Rose	50	1500
—	East Wheal Albert	1	5
256	East Wheal Alfred	2	10
9000	East Tamar Consols	1	1½
512	Fowey Consols	—	110
244¼	Grambler & St. Aubyn	—	80
100	Great Consols	1000	500
1000	Godolphin	—	35
256	Gonamena	6	116
256	Green Valley	12	12
20000	Galvanised Iron Co.	10	11½
100	Grogwinion	5	20
4000	Gunnis Lake	1	2½
10000	Hibernian	12½	1
1000	Holmbush	14	35½
128	Hallenbeagle	—	60
1000	Hanson	5	5
800	Hawkmoor	2	5
1000	Harrowbarrow Consols	1	3
160	Levant	—	150
128	Lanarth & Penstruthal	—	150
1000	Lewis	5	6
128	Ludcott	3	5
20000	Mining Co. of Ireland	7	13
2800	Marke Valley	10	5
70	North Roskear	—	630
200	North Holmbush	—	15
100	North United	29	20
256	North Wheal Rose	22½	75
256	North Treburget	1	5
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	770
256	Penhallow Moor	15	20
128	Pen-y-Cefn Mine	50	55
100	Penrhiw	30	40
10000	Rhymney Iron	50	40
256	Rose Consols	10	7
800	South Towan	10	1½
280	Spearn Moor	20	—
1000	Stray Park	43	18½
128	South Wheal Basset	—	290
128	South Caradon	5	600
256	St. Austell Consols	4	10
256	South Wheal Rose	2	3
128	South Yeoland	10½	25
256	South St. George	—	10½
120	Trethellan	5	90
128	Trewavas	—	57½
96	Tresavean	10	280
128	Tregardock	3	8
128	Tokenbury	97	100
256	Trenow Consols	—	135
120	Treviskey and Barrier	61	230

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
5000	Treleigh Consols	5½	4½
9600	Tamar Consols	3	11½
6000	Tincroft	7	14
128	Trewellard	12	25½
250	Trelawney Consols	2½	4
256	Ting Tang	17	22
4000	United Hills	5	4
100	United Mines	1000	900
6000	Wicklow Copper	5	16½
512	West Fowey Consols	40	35
384	Wheal Franco	20	70
128	Wheal St. Andrew	65	20
127	Wheal Virgin	—	80
256	West Caradon	40	400
3845	West Wheal Jewel	10½	4½
120	West Trethellan	5	55
128	Wheal Rose	40	45
256	West Wheal Tolgus	6	6½
1000	Wheal Harriet	½	[illegible]
128	Wheal Penrose	—	10
128	Wheal Providence	16	150
68	Wheal Clifford	—	500
256	Wheal Albert	10	12
128	West Basset	10	45
128	Wheal Acland	13	12
128	Wheal Sisters	43½	50
99	Wheal Seaton	150	400
128	Wheal Henry	—	30
110	Wheal Hope (Zennor)	14	18
256	Wheal Hope	7	6
4000	Wheal Martha Consols	3	5½
130	Wheal Trelawny	10½	135
200	Wheal Prudence	30	26
256	Wheal Norris	6½	12
256	Wheal Treven	4	5
107	Wheal Trevilson	10	12
128	Wheal Catherine	5½	12
256	West Providence	—	7½
256	Wheal Robins	13	15
256	West Wheal Treasury	12	12
256	West Wheal Shephard	2	15
128	Wheal St. Cleer	7½	30
128	Wheal Reeth	1	60
128	Wheal Gill	17½	40
128	West Cargoll	2	15
256	Wheal Mary	1	5
256	Wheal Concord	1	15
128	Wheal Venland	2½	10½
256	West Wh. Friendship	—	5
256	Wellington Mines	20	—
128	Wheal Prospect	4	7½
256	Wheal Victoria	2	10
240	Westerlake	3	100
1024	Wheal Maria	1	600
256	Wheal Fortescue	1½	40
256	West Wh. Maria	—	32½
128	Wheal Pollard	3	20
512	Wheal Sarah	2½	—
256	Wh. Cleveland	2½	5

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	3
15000	Asturian Mining Co.	5	5½
10000	Anglo-Mexican Co.	100	3
3374	Ditto Subscription	25	4
2000	Bolanos	150	6
12000	Ditto Scrip	15	7
10000	Brazilian Imperial	21	7
10000	Cata Branca (Braz. Co.)	6½	—
12000	Cobre Copper Co.	40	22½
8500	Colombian Co. regis.	55	} 4½
5000	Ditto Scrip	—	}
10000	Copiapo Mining Co.	14	5½
20000	General Mining Ass'n.	20	15
5351	Mexican Company	59	5
12000	Mocaubas & Cocaes	25	5
29320	{ Rl. del Monte, regis.	28½	{ 4½ ¾
	{ Ditto unregistered		{ 4½ 5½
	Ditto Red Debentures		19
	Ditto Black ditto		17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	24
2000	Pachuca Mines	3	10
11000	St. John del Rey	15	9½
43174	United Mexican	28½	4½

RAILWAY SHARE LIST, AND TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Pd. on share.	Val. of Share.	Last Div.	*Traffic Returns* 1845	1844
Arbroath and Forfar	15	£140,782	20	22½	2½	£158	£162
Birmingham and Gloucester	55	1,527,267	100	134 6	2	—	2086
Bristol and Birmingham	90½	—	—	—	4	3641	—
Bristol and Gloucester	37½	501,177	30	56 8	1½	—	—
Chester and Birkenhead	15	519,331	50	47	¾	609	532
Dublin and Drogheda	32	579,253	60	97	1½	739	—
Dublin and Kingstown	6	349,736	100	240	6	—	1722
Dundee and Arbroath	17	153,416	25	35	¾	260	253
Durham and Sunderland	19	267,769	50	30	4	634	431
E. Counties & North. & East.	84	4,090,328	45	—	1½	4694	4420
Edinburgh and Glasgow	46	1,686,226	50	64 6	1½	2856	2363
Glasgow, Paisley, and Ayr	51	1,081,531	50	60	1½	1664	1239
Glasgow, Paisley, & Greenock	23	787,844	25	18	1½	847	737
Grand Junction	119	2,503,671	100	228	10	9193	7648
Gravesend and Rochester	—	—	—	—	—	141	—
Great North of England	45	1,280,076	100	200	6	1705	1353
Great Western	220	7,455,689	80	186 8	8	16563	14974
Liverpool and Manchester	31	1,698,626	100	201 3	9	5227	4347
London and Birmingham	120	6,393,468	100	234 6	10	18842	17444
London and Blackwall	4	1,078,851	16⅔	9 ¼	1½	1020	1050
London and Brighton	56	2,637,753	50	62¾ 3½	6	3792	3538
London and Croydon	10	761,885	13½	18 ½	4	1175	311
London and Greenwich	4	1,038,340	12½	10½ 11	—	987	244
London and South-Western	93	2,604,405	50	78 80	10	6150	6139
Manchester and Birmingham	31	1,959,062	40	57 9	5	3760	3254
Manchester & Leeds & Hull	87	3,972,869	73	138	8	5955	78513
Manchester, Bolton, & Bury	10	792,336	93	160 2	5½	926	737
Midland	179	6,259,838	100	156 8	6	11192	8623
Newcastle and Carlisle	65	1,085,497	100	117½8½	4	1385	1319
Newcastle and Darlington	22½	506,788	24	48	8	1173	544
Newcastle and North Shields	7	316,869	50	68 70	6	362	307
North Union, Bolton & Preston	32	1,028,593	100	145 6	6½	1448	1222
Preston and Wyre	22	432,014	50	32½ 3½	—	449	241
Sheffield and Manchester	19	690,000	87½	120 2	—	727	536
South-Eastern and Dover	88	3,464,172	33½	39¾40½	2½	4482	3691
Taff Vale	30	595,090	100	104 6	3	926	894
Ulster	25	347,345	29½	49 50	5	557	594
Yarmouth and Norwich	20½	250,057	20	27½ ¾	5	228	—
York and North Midland	53	1,107,146	50	102 4	10	2432	1524
Paris and Orleans	—	2,000,000	20	46½ 7	4	6015	5499
Paris and Rouen	—	1,995,306	20	41½ 2	7½	5230	4735

The following are current prices of Railway Shares, not included in the above Table:—

Name of Railway.	Price.	Name of Railway.	Price.
Aberdeen	4½	North Wales Mineral	18 16½
Armagh, Coleraine, and Portrush	2¾ ½	North Wales	2½ 3
Bristol and Exeter	82 4	Portsmouth Direct	2½
Brighton, Lewes, and Hastings	11 10¾	Richmond and West End Junction	3½
Caledonian	12½ 12	Rugby, Worcester, and Tring	4½ ¾
Cambridge and Lincoln	7½ 8¼	South Wales	6 5¾
Churnet Valley	7½ 7	South Devon	28
Chester and Holyhead	17¾ 8½	Scottish Central	7½ 6¾
Cornwall	4½	Sheffield and Lincolnshire	1¾ 2
Coventry, Bedworth, & Nuneaton	3½ 4	Shrewsbury and Grand Junction	5½ ¾
Coventry and Leicester	2½	Shrewsbury, Wolverhampton, &c.	4½
Direct Northern to York	3 ½	Staines and Richmond	1½ ¾
Direct Norwich	10½	Scarborough	33½ 4
Diss, Beccles, and Yarmouth	1¾	Scottish Midland	3½ ¾
Dublin and Belfast	10 ½	Trent Valley	19 18¾
Dublin and Galway	3¾ ½	West Cornwall	3¾
Dublin and Mullingar	4½ ¾	West Yorkshire	7
Ely and Bedford	3½ ¾	Waterford and Kilkenny	3½
Eastern Union	21½	Yarmouth and Norwich	27½ ¾
Essex and Suffolk	2¾ 3	York and Selby	68½
Gt. Southern & Western (Ireland)	18½ 19		
Great Grimsby and Sheffield	6½	Boulogne and Amiens	9¾ 10½
Guildford, Farnham, and Portsmouth	5½	Bordeaux and Toulouse	2¾ ½
Hull and Gainsborough	1½ ¾	Ditto, Toulouse, and Cette	2¾
Harwich and Eastern Counties Junc.	2 1½	Dieppe and Paris Junction	2¾
Kendal and Windermere	5½ ¾	Central of France	15
Kentish Coast	1½ ¾	Great Northern of France	5½ ¾
Lincoln, York, and Leeds	1½	Lyons and Avignon	2¾ ½
London and York	5½ 4¾	Orleans, Tours, and Bordeaux	9½ 10
Lynn and Ely	6½ ¾	Orleans and Vierzon	14½ 15
Lynn and Dereham	3½ ¾	Paris and Lyons (Ganneron's)	2½
Lancaster and Carlisle	43½	Paris and Lyons (Caion's)	2
Londonderry and Enniskillen	3¾ ½	Paris and Lyons (Lafitte)	2¾
Londonderry and Coleraine	3¾	Paris and Strasburg	2½ ¾
Newcastle and Berwick	13 14½	Paris and St. Quentin	1½
Newcastle New (Brandling)	30½29½	Rouen and Havre	26½27½
Newark and Sheffield	5 5½	Royal North of Spain	2½
Newry and Enniskillen	5½ ¾	Sambre and Meuse	9½ ¾
North British	17½ ¼	Strasburg and Basle	12
North Kent	5½ 6¾	Tours and Nantes (Mackenzie's)	3
Norwich and Brandon	16¾17½	Ditto (Levevres)	3

London:—Printed and Published, weekly, by Henry English, at the Office, No. 26, FLEET-STREET, in the city of London, where all Communications and Advertisements are requested to be forwarded—addressed to "the Editor"—post-paid. [*May* 3, 1845.

The Mining Journal.

No. 506.] ENLARGED SHEET. [MAY 3.

EASTERN COUNTIES RAILWAY.

COLCHESTER LINE.

REDUCTION OF RATES.—EXTRA GOODS TRAIN.

The PUBLIC are informed that, on and after the 1st of MAY next, the RATES for the conveyance of MERCHANDISE and AGRICULTURAL PRODUCE on this line will be REDUCED. Printed bills, containing full particulars, may be obtained at the different stations.—For the accommodation of the public, an EXTRA GOODS TRAIN will leave London at half-past Twelve P.M., and Colchester at Seven P.M., on and after the 1st day of May.

By order, Shoreditch Station, April 12, 1845.

EASTERN COUNTIES RAILWAY.

COLCHESTER LINE.

The PUBLIC are informed, that, on and after MONDAY NEXT, 5th of May, THIRD-CLASS PASSENGERS will be conveyed between LONDON and COLCHESTER at the rate of A PENNY PER MILE. The train will leave London at 12.30 P.M., and return from Colchester at 7.0 P.M. The distance will be performed in about three hours and a half.

Full particulars in Time Bills.

Offices, London Terminus, May 1, 1845.

EASTERN COUNTIES RAILWAY.

CAMBRIDGE LINE.

EXPRESS TRAINS BETWEEN LONDON AND BISHOPS STORTFORD.

Notice is hereby given, that, on and after MONDAY NEXT, the 5th of May, a TRAIN, conveying FIRST and SECOND CLASS PASSENGERS, will leave Shoreditch for Bishops Stortford at a quarter past Nine A.M., and Bishops Stortford, for Shoreditch, at Eleven A.M., performing the distance each way in about three-quarters of an hour. These trains will not stop at any of the intermediate stations.

Offices, London Terminus, April 29, 1845.

ROYAL NORTH OF SPAIN RAILWAY.

The board of directors hereby give Notice, that they are ready to RECEIVE TENDERS for the HIRE of a STEAM-VESSEL, of about, but not less than, 100-horse power, to be employed in the conveyance to the port of Aviles, on the northern coast of Spain, of the surveying and engineering staff, the *materiel* connected therewith, &c. The contract to be for three months' certain, optional, on the part of the board, to continue the same for any longer period at a specified charge per month. The vessel must be approved of by a surveyor, to be appointed by the board, and to be at Falmouth, ready for sea, on Tuesday, the 6th of May next. The tender to include every expense, except the provisions for the officers and men in the employment of the company. By order of the board,

15, New Broad-street, April 28, 1845. THOMAS S. CUTBILL, Secretary.

WATERFORD, WEXFORD, WICKLOW, AND DUBLIN RAILWAY,

THROUGH WICKLOW, ARKLOW, GOREY, AND ENNISCORTHY, TO WEXFORD, NEW ROSS, AND WATERFORD,

WITH A BRANCH FROM ENNISCORTHY TO CARLOW.

Total Length, with Branches, 150 miles.

Capital £2,000,000, in 100,000 shares, of £20 each.—Deposit £1 10s. per share.

PROVISIONALLY REGISTERED.

OFFICES, No. 449, WEST STRAND, LONDON.

PROVISIONAL COMMITTEE.

Colonel Acton, M.P.	The Hon. Somerset R. Maxwell
Earl of Bessborough	Thomas Meagher, Esq., Chairman of the Waterford and Limerick Railway
Thomas Barnewall, Esq.	
Edward Bayly, Esq.	H. K. Grogan Morgan, Esq.
M. F. Beauman, Esq.	Richard W. Morris, Esq.
W. T. Bookey, Esq.	John Nunn, Esq.
Thomas Boyce, Esq.	Captain Robert Owen
Major James Boyd	Lieutenant-Colonel Owen
Lotus A. Bryan, Esq.	Sir John Power, Bart.
Lord Carew	James Power, Esq., M.P.
Honourable R. S. Carew, M.P.	Charles Putland, Esq.
The Earl of Courtown	Stephen Ram, Esq.
Thomas L. Dennis, Esq.	J. Goddard Richards, Esq.
Richard Donovan, Esq.	Thomas N. Redington, Esq., M.P.
Robert Doyne, Esq.	William Sherrard, Esq.
Charles Doyne, Esq.	Lord Viscount Stopford
Viscount Duncannon, M.P.	John H. Talbot, Esq.
Sir Thomas Esmonde, Bart., M.P.	James Talbot, Esq.
James Galway, Esq.	Daniel Tighe, Esq.
John George, Esq., Q.C.	Charles Tottenham, Esq.
P. D. Hadow, Esq., director of the Cork and Waterford Railway	Sir B. Morris Wall, Mayor of Waterford
	Thomas Wyse, Esq., M.P., Chairman of the Cork and Waterford Railway
John Macdonnel, Esq.	
John Maher, Esq.	John Crosthwaite, Esq., Liverpool

Directors of the Great Western and the South Wales Railways.

Lord Viscount Barrington, M.P.	J. W. Miles, Esq.	
F. P. Barlow, Esq.	E. W. Mills, Esq.	
R. F. Gower, Esq.	David Lewis, Esq.	
W. G. Hayter, Esq., M.P.	Louis Vigurs, Esq.	

Directors of the Bristol and Exeter Railway.

James Gibbs, Esq.	Frederick Ricketts, Esq.	W. Watson, Esq.

With power to add to their number.

ENGINEER—I. K. Brunel, Esq.

BANKERS—Messrs. Glyn, Halifax, Mills, and Co.

SOLICITORS—Messrs. W. O. and W. Hunt, 10, Whitehall.

SECRETARY pro tem—Richard M. Muggeridge, Esq.

The object of this line is to connect the metropolis of Ireland with the important ports of Wexford, Waterford, and Cork (the latter by means of the proposd Cork and Waterford Railway), and to afford to the inland counties of Ireland the most direct route (with the shortest sea voyage) to South Wales, the south of England, and to London.

The importance of Waterford as a harbour and port is too well known to need any detailed account; suffice it to say, that its exports and imports have considerably increased within the last few years; indeed, it is one of the most important ports of Ireland.

The bay of Wexford has been carefully examined, and the result shows it capable of improvement to an extent that will admit of the largest steamers coming up to a quay, to be erected a short distance from the town, to which railway communication can readily be continued; and the capital of the company has been fixed with this view.

The proposed line will give to the rich agricultural counties of Kilkenny and Carlow a remarkable facility for the transmission of their produce, through the important ports of Wexford and Waterford, to the great market for Irish provisions afforded by the dense mining populations of South Wales and Cornwall, as well as to the inland and manufacturing districts of England and the metropolis, and will facilitate the development of the well-known mineral resources of the county of Wicklow, abounding in copper, lead, and other ores, and afford them ready access to the best markets.

The proposed line was brought under the consideration of the Board of Trade by its present promoters last year, but at too late a period to admit of all the necessary details being furnished to enable the Board to give their final decision upon the scheme. They, consequently, recommended its postponement for another session; but in their report they publish the following extract from that of the commissioners appointed by Parliament to inquire into the manner in which railway communications could be most advantageously promoted in Ireland:—"Should the country at a future period show resources sufficient to justify the establishment of a railway between Wexford and Dublin, it is possible that the best line will not be found to pass through Carlow, but along the coast to Arklow, and thence through the county of Wicklow to Dublin."

The Board follow up this extract by these remarks:—"Here there are two competing schemes, the one (Dublin, Carlow, and Wexford) complete in itself, but likely to be more costly than its traffic may justify. The other (the proposed line) incomplete, immature, but still a measure vastly more comprehensive, and, if carried into effect, backed by a powerful monied interest, of manifestly greater national advantage."

The preliminary examination made last year was sufficiently satisfactory to warrant (without entering into details) the belief that a fully remunerative traffic will present itself on the proposed line. This belief is strengthened by the new railway extensions projected since the period of such examination, and by the generally favourable character of the country in an engineering point of view.

That portion of the proposed line which is intended to connect Waterford and Wexford, will receive a very large traffic from the Waterford and Limerick and Waterford and Kilkenny Railways, which have been favourably reported upon by the Board of Trade, and to which, in reference to the proposed line, the following remarks of the Board of Trade on the former of these lines may be considered applicable:—

"The passenger traffic has hitherto been directed more towards Dublin than to Waterford; but if the South Wales Railway should receive the sanction of Parliament, and be placed in connection with steamers to Wexford or to Waterford, a portion of the Limerick passenger traffic will be diverted from Dublin in the direction of Waterford, as giving the readiest route to Bristol, and a convenient route to London. The goods' traffic will undoubtedly take the line to Waterford rather than to Dublin—Waterford being the more convenient sea-port."

The shortness of the passage from Wexford to Fishguard, and its favourable character with respect to the tides, prevailing winds, &c., would of course render Wexford the most eligible of the Irish ports for embarkation; and, when it is considered that a coast line from Cork to Waterford, *via* Youghall, also that a line from Kilkenny to Galway, are projected, it will be evident that a vast portion of the traffic of Ireland, south and west of Dublin, must fall in upon some part of the proposed railway.

The very romantic and justly celebrated beauties of the county Wicklow, in the immediate vicinity of which the proposed line will pass for many miles, will probably attract a larger passenger traffic than any other railway in Ireland. On this point the railway commissioners report:—"Among the inducements which we may notice, as holding out a prospect of support for such undertakings, are to be mentioned the numbers from all parts of the United Kingdom, and even from the continent of Europe, who would resort to Ireland as travellers to view the natural beauties of its splendid and varied scenery."

When it is remembered how very imperfectly, at present, the rich and varied resources of Ireland have been developed, and how highly distinguished the district through which the proposed Waterford, Wexford, Wicklow, and Dublin Railway will pass, has long been for the possession of all the elements that constitute commercial and agricultural greatness, coupled with the uniform tranquility and industry which pervade all classes of its population, the promoters of this undertaking have the fullest conviction that, alike on public and private grounds, it will be found worthy of general confidence and support.

The usual power will be taken by the Act to allow interest at £4 per cent. per annum on the amount of the subscriptions paid up, and no subscriber will be answerable for more than the amount of his deposit of £1 10s. per share until the Act be obtained, and then not beyond the amount of his subscription.

Prospectuses may be had, and applications for shares, in the following form, may be addressed to the secretary, at the offices of the company, or to the solicitors.

To the Provisional Committee of the Waterford, Wicklow, and Dublin Railway.

Gentlemen,—I request you will allot me shares, of £20 each, in the above proposed railway; and I hereby engage to pay the deposit of £1 10s. per share, and to sign the subscribers' agreement and Parliamentary contract when required.

Dated day of 1845.

Signature .....
Trade or profession .....
Residence .....
Reference .....

LONDON AND WINDSOR RAILWAY—Offices, No. 62,

Moorgate-street, London, April 28, 1845.—The applications for shares in this company being upwards of 200,000, the provisional committee have been compelled to DELAY the ALLOTMENT, in order to make the necessary inquiries respecting the applicants.

The letters of allotment will be issued this week, and the committee have to request that those parties who may not receive an allotment, will accept this general answer to their applications; at the same time, the committee much regret that so many applications of great respectability, have necessarily been omitted, and all greatly abridged.

By order of the committee, E. W. H. BELL, Secretary.

NEW ROSS AND CARLOW JUNCTION RAILWAY,

PASSING THROUGH GRAIGUE, BORRIS, AND BAGNALSTON.

Capital £300,000, in 15,000 shares, of £20 each.—Deposit £1 10s. per share.

The names of the directors and other particulars will be published in a day or two.

BANKERS.

London .....The Commercial Bank of London.
New Ross .....The National Bank of Ireland.

SOLICITORS.

London: Messrs. Amory, Sewell, and Moores.—New Ross: Anthony F. French, Esq.

PARLIAMENTARY AGENT.

Cadwallader T. Waddy, Esq., 103, Jermyn-street, St. James's.

Applications for shares in this company must be made before the 15th inst., to Messrs. John Shewell and Sons, 24, Tokenhouse-yard, London; or to Anthony F. French, Esq., New Ross.—Printed forms of application for shares may be had of the solicitors.

ALTO DOURO RAILWAY.

Capital 6000 contos of reis (£1,350,000), in 60,000 shares, of 100 milreis (£22 10s.) each.—Deposit 6 milreis (£1 7s.) per share.

This line, formed under the highest patronage, both in Portugal and this country, will immediately connect the harbour of Oporto with the entire wine district.

Following the valley of the Douro, no engineering difficulties present themselves—a fact satisfactorily ascertained by preliminary surveys. Even from existing statistical returns, the traffic of this route will amply repay investment, and, when conjoined with the increase which has invariably attended the introduction of railway transit, will insure a far greater return than any project of the day.

Prospectuses will shortly be issued; in the mean time applications for shares may be made at the temporary offices of the company, 95, Gracechurch-street, City.

May 2, 1845. By order, T. M. RUSSELL, Secretary.

SHREWSBURY, HEREFORD, AND NORTH WALES RAILWAY COMPANY.—*Provisionally Registered.*

Capital £1,250,000, in 25,000 shares of £50 each.—Deposit £2 15s. per share.

PROVISIONAL COMMITTEE.

J. Winder Lyon Winder, Esq. Vaenor Park, High Sheriff of Montgomeryshire
Sir Robert Williames Vaughan, Bart. Hengwrt, Dolgelley
The Honourable Henry Hanbury Tracy, Gregynnog Hall, Montgomeryshire
Sir Charles Thomas Jones, Montgomery, Magistrate of Montgomeryshire
George Coleman, Esq. Hill Top, Dilwyn, Herefordshire
Rev. Richard John Davies, Aberharfesp, Magistrate of Montgomeryshire
Arthur Henry Wall, Esq. Lady Meadow, Herefordshire, and Woodlands, Rutlandshire
Major Newcombe, Penstrowed, Montgomeryshire
The Rev. John Robert Smythies, Lynch Court, Herefordshire
George Beadnall, Esq. 1, Lombard-street, London
William Oakley, Esq. Oakley Park, Magistrate of Salop
Martin Williams, Esq. Brongwyn, Magistrate of Montgomeryshire
James Henry Levin, Esq. 23, Coleman-street
David Pugh, Esq. Llanerchyddol, Magistrate of Montgomeryshire
William Mainwaring, Esq.
Francis Woodhouse, Esq. Leominster.
Edward Johnes, M.D., Garthmyl, Magistrate of Montgomeryshire
William Morris, Esq. Pentrerant, Magistrate of Montgomeryshire
John Kerr Hastings, Esq. Hereford
John Nelson Carpenter, Esq. Glan Arrow, Herefordshire
Andrew Turnerson Peterson, Esq. Middle Temple
Rev. Devereux J. Mytton, Llandysil, Magistrate of Montgomeryshire
Rev. John Arthur Herbert, Glanhafren, Magistrate of Montgomeryshire
John Foulkes, Esq. Milford House, Magistrate of Montgomeryshire
Thomas Reginald Kemp, Esq. 3, Abchurch-lane, London
Arthur Thomas Morley, Esq. Newtown Hall, Montgomeryshire
John Baker, Esq. Dolforwyn Hall, Montgomeryshire
Philip Morris, Esq. The Hurst, Shropshire, Magistrate of Shropshire
Edward Bernard Coleman, Esq. Church Stretton, Salop
Samuel George Beamish, Esq. Macsmaur
John Owen, Esq. Broadway, Magistrate of Montgomeryshire
Wythen Jones, Esq. Rhiewport, Magistrate of Shropshire
J. H. Lyon, Esq. Vaenor, Montgomeryshire
Captain Herbert, Glanhafren, Montgomeryshire
George Mears, Esq. Dolly, Llanidloes, Magistrate of Montgomeryshire

(With power to add to their number.)

BANKERS.

London—Messrs. Smith, Payne, and Smiths
" —Messrs. Barnard, Barnard, and Dimsdale
Shrewsbury—The National Provincial Bank of England
Newtown— Ditto
Hereford and Leominster—The Herefordshire Banking Company
Bishop's Castle—North and South Wales Bank
Dolgelley—The National Provincial Bank of England

ENGINEER—I. K. Brunel, Esq.

STANDING COUNSEL—Horace W. Meteyard, Esq.; and J. K. Smythies, Esq.

SOLICITORS.

Messrs. Lewis and Ford, 28, Essex-street, and 41, Moorgate-street; and Edwin Smith, Esq., Gray's Inn, London; James Thomas Woodhouse, Esq., Leominster; John Owens, Esq., Newtown, Montgomeryshire.

The important line of railway proposed to be constructed by this company, will commence at Shrewsbury, and proceed from thence, by way of Church Stretton, Ludlow, and Leominster to Hereford; and a branch will leave the line at or near the Craven Arms, and be carried by Bishop's Castle to the populous and increasing manufacturing town of Newtown, in Montgomeryshire.

The intended railway will thus form, in connection with the contemplated railway from Chester to Shrewsbury, and by a junction at Hereford with the Hereford and Monmouth line, the important link completing the great chain of railway communication from north to south on the western side of England, and by the branch to Newtown command the extensive traffic arising from North Wales and Cardiganshire, open this valuable district in the most direct course to London and to the south, as well as to the north of England, and ultimately form a portion of a great line from London to Dublin.

It will likewise form the nearest route from the north of England, Manchester, Liverpool, the rapidly increasing commercial town of Birkenhead, Ireland, Chester, Holyhead, and North Wales, *via* Shrewsbury to Worcester, Cheltenham, Gloucester, South Wales, Bristol, Bath, the south-western counties, Exeter, Plymouth, and Falmouth, and be a direct line into the centre of Wales from the northern and midland counties; thus the coal and other minerals and the extensive and constantly increasing iron-works of Staffordshire and Shropshire, the manufactories of Lancashire, the salt-works of Cheshire and Worcester, and the agricultural produce of the north, of the Valley of the Severn, Herefordshire, and Wales, will have a rapid and cheap transit, with the advantage of a return of imported articles, to the ports of Lancashire, Cheshire, Gloucestershire, Devonshire, and Cornwall.

This railway is imperatively required by the wants of the community; and the local traffic of the populous districts embraced by the undertaking will be found in itself sufficient to afford a remunerative return to the shareholders, and the vast augmentation of revenue which will arise from the completion of the works, and the thorough traffic consequent thereon, will make the stock of the company a highly beneficial investment, which affords the best guarantee to the public that the line will be efficiently worked.

There are no engineering difficulties either on the line or the branch, the gradients are favourable, and no works of more than an ordinary character will be necessary.

The expense of the undertaking, with an ample allowance for the adaptation of the wide gauge to perfect the junction with the Monmouth and Hereford Railway, and the other lines in connection with the Great Western Company, will be covered by the proposed capital.

The directors reserve the power of adopting the atmospheric principle, and the authority, in the event of a line of railway from the metropolis to Worcester having the sanction of Parliament, to form a branch to Worcester, and to raise the additional capital which will be required for its construction.

The capital intended to be raised is 1,250,000*l.*, divided into 25,000 shares of 50*l.* each.

A deposit of 2*l.* 10s. per share will be required to be paid upon the allotment to the credit of the directors in account with the bankers of the company, and no call will be made until an Act shall be obtained authorising the construction of the work.

The liability of the shareholders will be limited, by the Act, to the amount of their respective subscription to the capital stock, and power will be taken to allow interest at the rate of 4*l.* per cent. per annum on the amount of the deposits, and upon the further payments, until the opening of the line.

The subscribers' agreement and the Parliamentary contract will be required to be duly executed when the bankers' receipts are exchanged for certificates of scrip, of which fourteen days' notice will be given; and the deposits paid by persons making default in the execution of the subscribers' agreement and the Parliamentary contract, within the time limited, will be absolutely forfeited.

A preference will be given in the allotment of the shares to parties locally interested in the line; and no shares will be appropriated except to persons who shall give satisfactory reference.

Application for shares must be made, in the form appended, to Messrs. Lewis and Ford, solicitors, 28, Essex-street, Strand, and 41, Moorgate-street, London; Edwin Smith, Esq., solicitor, Gray's Inn, London; J. T. Woodhouse, Esq., solicitor, Leominster; John Owens, Esq., solicitor, Newtown, Montgomeryshire; Messrs. Carden and Whitehead, Threadneedle-street, London; Messrs. Parsons and Townley, and Mr. Robert Cartwright, Liverpool; Messrs. Cardwell and Sons, Manchester; Mr. W. H. Collis, and Mr. James Pearson, Birmingham; Messrs. Standish, Blackett, and Co., and Mr. James Jamieson, Leeds; Mr. Francis Stamp, Hull; Mr. L. Weatherburn, jun., Huddersfield; Mr. Thomas Boardman, Blackburn; Mr. George Dark, and Mr. Samuel Hutchinson, Bradford; Mr. William Cronheim, Halifax; Mr. Charles Spencer, Nottingham; Mr. Samuel Eyre, Derby; Messrs. Grayston and Earle, York; Mr. William Farrer, Ripon; Mr. E. H. Armitage, Wakefield; Messrs. Joseph Carr and Son, Whitehaven; Mr. James Stokes, Cheltenham; Mr. Joseph Clarke, jun., Southampton; Messrs. Tate and Nash, and Mr. W. H. Land, Bristol; Messrs. Beaumont and Langworthy, Exeter; Mr. John Thomas Holland, Coventry; Messrs. Reid and Nicholson, Messrs. Thomas Farquharson and Co., and Mr. Andrew Moffatt, Edinburgh; Messrs. Dunear and Hutchinson, Glasgow; Messrs. Oswald, George, and Co., Aberdeen; and at the office of the company, 41, Moorgate-street, London.

To the Provisional Committee of the Shrewsbury, Hereford, and North Wales Railway.

Gentlemen,—I request that you will allot me shares, of £50 each, in the above proposed railway, and I undertake to pay the deposit of £2 15s. per share, and to execute the subscribers' agreement and Parliamentary contract when required.

Dated this day of , 1845.

Name .....
Residence .....
Trade or profession .....
Reference .....

RAILWAY ON WIMBLEDON COMMON—PROSSER'S PATENT RAILWAY GUIDE WHEELS.

On and after the 12th of May, a line of railway about two miles in length will be opened on the above common, the engine and carriages fitted with Prosser's Patent Guide Wheels. A portion of the line is laid with iron, and the remainder with wooden rails, to show that these wheels are equally adapted for either description of rails.

The line contains gradients from 1 in 50 to 1 in 120, and a curve (upwards of half a mile in length), the radius of which is ten chains.

Engineers and others interested in railways are invited to visit this railway, as by the adpotion of these Guide Wheels, a great saving is effected in the expenses of working a line by the diminution of friction; and, if the wooden rails be adopted, a saving in the cost of making railways of from 3000*l.* to 4000*l.* per mile. Wimbledon Common is half a mile from the Wimbledon station of the South-Western Railway.

Every information may be had, and terms on which licenses will be granted for the use of these Guide Wheels, on application to Mr. George Hadley, 36, New Broad-street, London, secretary to Prosser's Patent Railway Guide Wheel Company.

RAILROAD AND GENERAL INVESTMENT BANKING COMPANY.

TO BE ESTABLISHED BY CHARTER OR ACT OF PARLIAMENT.

TRUSTEES FOR DEPOSITS.

The Right Hon. the Earl of Devon
The Hon. Philip Pleydell Bouverie, Hill-street, Berkeley-square
John Hodgson, Esq., Q.C., New-square, Lincoln's Inn
William Fullarton Lindsay Carnegie, Esq., Kinblethmont, Forfar, N. B.
Joshua Walker, Esq., Lambeth Lead-Works, and 27, Abchurch-lane

COMMITTEE OF ALLOTMENT.

G. J. Hossack, Esq. St. Mary-at-Hill
Thomas Galloway, Esq., Serjeant's Inn, Fleet-street
Samuel Hulme Day, Esq., 21, Pudding-lane

DIRECTORS.

The promoters of the company reserve to themselves the nomination of the first five directors (being noblemen, merchants, bankers, or others of equal respectability), whose names will be published in the *London Gazette*, and to whom the trustees will pay over such money as they may have received for shares.

BANKERS—Messrs. Bouverie and Co., 11, Haymarket.

STANDING COUNSEL—H. J. Hodgson, Esq., Pump-court, Temple.

SOLICITORS—Hodgson, Concanen, and Noyes, 5, Lincoln's Inn-fields.

40,000 shares, of £100 each.—Deposit £5 per share.

This bank will be founded upon the existing powers of the law; but application to Parliament is contemplated for investing it with those authorities and privileges which will be alike protective to the community, and remunerative to those whose money may be embarked in it. The business will be to employ the capital of the shareholders, and also the deposits made by the public for specified periods, for the purpose of investment.

With reference to the latter, it may be concisely stated, that there is a very large unemployed capital in the country, in sums of less than 500*l.*, remaining unproductive to the owners, in consequence of the want of a safe and simple means of investment, which this company will afford. These deposits will be received in such sums, for such periods, and at such rates of interest, as the directors shall, from time to time, declare.

The direction will be authorised to make advances to railroad companies, by way of loan or mortgage, on such securities as they may be empowered to give; to make similar advances to individuals on the security, by way of deposit or otherwise, of railroad scrip, shares, stock, debentures, and every class of railroad security; to take upon allotment, purchase, hold, and sell shares in railroads, and also to invest the capital and deposits on all such ordinary commercial and other approved securities, as are usually taken by bankers, insurance offices, and companies of a like nature.

The qualifications of a director will be twenty shares at the least. The first five directors will be authorised to add two to their body; and shareholders holding not less than ten shares each, will have the power of appointing five more from amongst themselves.

Power will be given to the direction to increase the capital, giving to the shareholders, for the time being, the right of taking the new stock in shares.

Applications for shares may be addressed, in the form at foot hereof, "To the Secretary of the Railroad Bank," at the offices of the solicitors, Messrs. Hodgson, Concanen, and Noyes, 5, Lincoln's Inn-fields.

FORM OF APPLICATION FOR SHARES.

I request you will allot to me shares, of £100 each, in the Railroad Investment Banking Company; and I hereby undertake to accept the same, or any less number allotted to me, to pay the deposit of £5 per share, and all further calls duly made thereon, and to sign the company's Deed of Settlement when required.

Dated the day of , 1845.

Name in full .....
Residence .....
Profession .....

Name, residence, and profession of a referee .....

N.B.—To avoid inconvenience, applications for shares, unless they are made by "firms or persons of commercial and other known standing," will not be attended to in any case where the referee is not of like standing.

PILBROW'S ATMOSPHERIC RAILWAY AND CANAL PROPULSION COMPANY.—*(Provisionally Registered.)*

Capital £600,000, in 60,000 shares, of £10 each:—Instalment £1 per share.

Since the issuing of the former prospectus, the provisional directors have considered it desirable to negotiate with the patentee for his whole right of patents, instead of confining themselves to the United Kingdom and Ireland, as originally proposed; and the directors have now the satisfaction of announcing to the public, that they have agreed for the purchase of the British and foreign right of Pilbrow's Atmospheric Railroad and Canal Propulsion Patents. By this extended arrangement the directors have obtained the patents upon much more advantageous terms for the proprietary, in consequence of which the amount of call necessary to carry out the object and intention of the company will be greatly diminished, and the prospect of immediate return considerably increased.

In lieu of £5, £1 per share is considered ample to cover the expenses of purchase, and to lay down a line of sufficient length to prove the superiority of Pilbrow's Atmospheric principle.

The enlargement of this undertaking, however, necessarily involves many changes; the amount of capital and the number of shares must be considerably augmented, but the shares will still be continued at the same amount—viz., £10 shares, to meet the wishes of the original applicants.

An instalment of £1 per share will be required on the signing of the Deed of Settlement.

DIRECTORS.

The Right Honourable the Earl of ESSEX, Chairman.
The Right Honourable the Earl of BESSBOROUGH.
George Buckley Bolton, Esq.
Lieutenant-Colonel Gilliess.
Captain Britten.
Frank Lambert, Esq.
Anthony White, Esq.

RESIDENT DIRECTOR—Dr. John Grigg Hewlett.

AUDITOR—Thomas Edwards, Esq.

CONSULTING ENGINEER—James Pilbrow, Esq.

ENGINEERS—Alex. Gordon, Esq., M. Inst. C.E.; Frederick Braithwaite, Esq., C.E.

STANDING COUNSEL—Thomas Webster, Esq.

SOLICITORS—Messrs. White and Borrett.

SECRETARY—Charles Collins, Esq.

BANKERS.

London Joint-Stock Bank, City Branch.
Messrs. Cocks, Biddulph, Biddulph, and Co., 43, Charing Cross.

OFFICES, 6, KING WILLIAM-STREET, LONDON.

The prominent advantages of this system of atmospheric traction are, that the continuous valve is dispensed with—roads are crossed upon a level without interruption of main—one atmospheric railway can be intersected by another, thus saving bridges, approaches, and leakage—and it is confidently expected that a stationary engine every ten miles will be sufficient.

The system combines extreme simplicity with perfect efficiency, and that obtained with a small comparative expense in working and construction.

It is estimated that a saving altogether upon the other plans of atmospheric railways (having the continuous valve), would be nearly £3000 per mile: two mains or lines can, on this plan, be laid for little more than the cost of one, upon the other plans, and a saving in working, or annual expenses, of two-thirds.

Increased safety is insured, also obstruction and destruction by weather and other causes are placed beyond probability by the mains being buried, &c.

The objects of the company will be to dispose of foreign patents; to grant licenses to British and Foreign railway and canal companies to use the invention, or lay down the works under contracts with the different companies; and to lay down an experimental line in the neighbourhood of the metropolis, by agreement with any existing company or otherwise.

The income derivable from these sources offers considerable advantages, while the expenses, with the exception of the purchase of the patents, and laying down the experimental line, are obviously small.

A model, upon a scale of one inch to the foot, may be seen at work on Wednesdays and Thursdays, between twelve and three o'clock, at the company's offices, by application to the secretary or officers of the company.

FORM OF APPLICATION FOR SHARES ADDRESSED TO THE SECRETARY.

To the Directors of Pilbrow's Atmospheric Railway and Canal Propulsion Company.

Gentlemen,—I request you to allot me shares, of £ each, in the above company, and I undertake to accept the same, or any smaller number of shares that may be allotted to me, and to pay the instalment thereon, and to execute the Deed of Settlement.

Dated this day of 1845.

Name .....
Address .....
Profession or trade .....
Reference .....

SEYSSEL ASPHALTE COMPANY—"CLARIDGE'S PATENT."—*Established 1838.*

This Asphalte is a bituminous limestone, obtained from an inexhaustible mine at Pyrimont, in the Jura mountains. Previously to its introduction into this country, in 1838, the material had been used for many years in France, and, from its great utility, was extensively patronised by the Government of that country.

Among the various uses to which it can be applied, the following may be enumerated:—For foot-pavements, public and others; in the carriage approach to mansions, garden-walks, and terraces; the flooring of kitchens and other basement offices; also of coach-houses and stables, dog-kennels, barn-floors, cow-houses, piggeries, poultry-houses, tan-rooms, and maltings. For roofing, covering of railroad and other arches, the lining of underground cellars near rivers, to prevent the ingress of the tides; also in covering the ground line of walls, to prevent damp rising *(this application of the Asphalte of Seyssel is particularly recommended by the Commissioners of the Fine Arts)*, thereby rendering the basement stories in the worst situations both dry and warm. It is an excellent cement, as applied to docks, breakwaters, or walls built for resistance to the encroachments of the sea. For lining of tanks, fish-ponds, and other hydraulic purposes.

I. FARRELL, Secretary,
Seysse Asphalte Company's Works, "Claridge's Patent,"
Stangate Depôt, London.

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RAILWAY GAZETTE.

RAILWAY PROGRESS.

We last week furnished a succinct statement of the progress and position of the Chester and Birkenhead Railway, giving copious statistics of its cost and gradual advance, and inferring from its success as a minor and struggling line, the extended advantages of the railway system generally. We now propose to place side by side with that review a similar sketch of the Dundee and Arbroath line. The company has been formed with a capital of 200,000*l.*, to be raised by the issue of 8000 shares, at 25*l.* each. The whole of this subscription has been paid up, while the total amount hitherto expended has been 153,416*l.*, the total length being only seventeen miles. By the last report, presented to the proprietors in June, 1844, we find that of this 153,416*l.*, 110,216*l.* was expended on the purchase of ground and property, the construction of the line (independent of the erection of stations, &c.), and the account paid to the contractors, and the remaining 43,200*l.* on Parliamentary expenses, embankments, stations, and other works, besides various contingent items consequent on the construction and opening of the line. The revenue account for the year ending the 1st of May, 1844, shows a total expenditure during that period of 8633*l.*, of which 1825*l.* appears for engine expenditure, 1251*l.* for carrying account, 440*l.* for general charges, 733*l.* for maintenance of way, 133*l.* for repairs of stations, and 150*l.* for minor disbursements, besides 2097*l.* for interest, about 2000*l.* for salaries, feu-duties, and a balance remaining in hand of 5354*l.* To meet these expenses, an income of 13,987*l.* was obtained from traffic, rents, &c., to which the passengers fares contributed 9137*l.*, parcels 710*l.*, merchandise 3363*l.*, cartages 86*l.*, rents of property 53*l.*, and carriage of mails 636*l.* During the preceding year, the number of passengers travelling on the line had been 237,936*l.*, paying an amount of 8967*l.*, while that for the year ending May 1st, 1844, was 243,569, paying 9137*l.*—showing an increase on the subsequent period of 5633 passengers, and 440*l.* for fares. The amount received for parcels in the year ending May, 1843, was 620*l.*, and for goods 2810*l.*—making a total, including passengers fares, of 12,128*l.* The parcels charges in 1844 amounted to 710*l.*, and goods 3363*l.*, which, with the passengers fares, amounted to 13,211*l.*—thus presenting an increase on the latter year of 1082*l.*, or an average amount of 25*l.* weekly. The consequence is, that, after paying off several minor debts, and a reduction of 3½ per cent. on their principal remaining debt, the company pay the fair and remunerative interest of 5*l.* per cent., and the last sale recorded on the books of the company is 35*l.* per share, on which, as we before mentioned, 25*l.* had been paid.

STANDING ORDERS—DIRECT NORTHERN RAILWAY.

In looking upon the present state of the railway world, who can help being struck with the precarious position in which the propagators and *bona fide* shareholders of the various schemes are placed, by the operations of their companies being investigated by so searching a tribunal as that of the Committee upon Standing Orders. That such a tribunal is, in the abstract, both necessary and beneficial, no one, looking round on the various projects concocted for momentary gain, fraudulent in their creation, and never intended to succeed, can reasonably doubt. For such no government could be too severe, nor no inquisition too rigid, to check its imposture, as well as warn the public from trusting to their professions. But, while an exacting and deterring power works usefully on such, unless the nicest discrimination be observed, these advantages will be more than neutralised by the injuries it will entail. At present there are many undertakings, not only sound and deserving in themselves, but promising to become sources of vast public advantage, yet these, from the very magnitude of their designs—though promoted under the surveillance of men, whose ability and integrity is beyond dispute—are frequently retarded, if not defeated, by an omission in some department of its machinery, the intricacy and delicacy of which is sufficient to compromise the safety of the most perfectly organised undertaking.

After the body of provisional directors have brought a project to a state of all but permanent success, despite all impediments thrown in its way by opposing interests, till they see it even favourably considered by that tribunal instituted by the Government itself to test its merits and professions; after its capabilities and superior advantages have been solemnly adjudged as well as publicly admitted, we frequently see it, on its progress before the Standing Orders' Committee, overthrown, and all its benefits to the community sacrificed, by the carelessness of some individual, or the omission of some detail which no caution could have obviated. And who is it that suffers? Not the engineer, or the solicitor, or the agent, in whose department the fatal contingency occurred—no, but on the shareholder immediately, and the public remotely; but not less immediately does the whole loss descend. And how are they to be defended from the errors of their officers or their servants—the latter not known, or, if known, not recognised by the public? A body of men select, for example, an engineer—one of tried talent and integrity—he is the pivot on which the whole affair must work, they place absolute confidence in him, allot him large grants of money, and, in fact, withhold nothing that can tend to the successful issue of the undertaking. It is quite impossible for the engineer to make a personal survey himself, to go over and make an admeasurement of every inch of ground; he is compelled to employ others, and by the slightest carelessness of one man (perverted into fraud by those interested to defeat it), an error is committed, entailing the overthrow of the whole project: it may be an error of magnitude, it may be but of trivial moment, the error has been committed—Standing Orders have not been complied with.

We have been drawn into these remarks by the result of the inquiry into the Direct Northern line, before the Committee of Standing Orders: in the preparation of the project, and in the numerous details necessary for the information of Parliament, some omissions and errors have occured purely, we are confident, from the haste in which it was prepared to go before the Legislature this session; and the Committee have decided that the omissions are fatal, and such as to preclude their dispensing with the Orders. Now, while we would be far from holding, that there should be no rule, no protection, or no limits to railway transactions, widely different as have always been our principles and repeated professions, we would contend that, before a wholesome and authoritatively approved undertaking is suddenly condemned by a secondary tribunal, its merits, its capabilities, above all, its integrity and national advantages, should be sedulously investigated: these should be the great and primary subjects for examination, to which every other minor detail should be made subservient, and in which every other consideration should be merged. Such a course would meet every object which the present defective law wishes to attain: the fraudulent, with the useless, schemes, would be successfully defeated, while grand and sterling projects, for public aggrandisement and legitimate private investment, would be advanced, instead of being compromised, as they now are, by some insignificant defect, wholly independent of the merits of the scheme. We observe that, though unquestionably impeded by the decision of the Select Committee, it is the intention of the committee of the Direct Northern to proceed with their case before the other authorities inquiring into the group of bills in which their project is included, expressing, as they do, at the same time, the fullest confidence that the superior merits of their line north of Lincoln are so unquestionable, as to secure the assent of Parliament, if not this session, at all events in the succeeding. This, of course, is wholly problematical. After the vicissitudes which have already characterised the lines projected for supplying this particular district, alternating now in favour of this and now of that, it would require more than ordinary foresight to prognosticate the issue of these contending schemes.

REPORT OF THE SELECT COMMITTEE ON ATMOSPHERIC RAILWAYS.

The results which we anticipated from the appointment of this tribunal, have fully confirmed our previously-expressed opinion; doubting its capacity to furnish any decision on which either authority or reliance could be placed, we foresaw from the first the worse than failure that must follow its creation. Men of no practical scientific knowledge whatever, accustomed solely either to political or commercial considerations, how could they be expected to give a satisfactory, even a commonly intelligible, opinion on the merits of as great and intricate a scientific question, as, perhaps, ever agitated the community? It was not as a preliminary inquisition, nor as an inferior or secondary tribunal, merely to offer suggestions and recommend certain modifications, that this committee was created; in such a case their inability would have been less conspicuous—certainly, less injurious—but a number of members were selected from our Parliament, solemnly and judicially to set at rest a *vexata quæstio*, to pronounce an authoritative decision on a question of vast national importance, but on which the public generally was ignorant, and rendered more so by the conflicting statements of disinterested and connected parties, more competent to have given satisfactory information. It was to obviate this disadvantage that a final reference was made to Parliament, and out of that assembly, comprising many highly competent to give both a lucid and unpledged opinion, a selection was made as unsatisfactory as it was unworthy. And what are the fruits of this committee? A shallow, unmeaning, and absolutely ridiculous report; instead of being comprehensive, it is brevity itself, and brevity not redeemed by succinct concission, but characterised by rambling verbiage. They appear to feel their inability in every line; they shirk the entire question, and leave it—not where it was before, but ten-fold more mystified. In their simplicity, they, at one period, give vent to an exclamation, indicative more of their highly imaginative conceptions than their common sense, in such a rhapsody as this—"If it were practicable to suspend *all* railway legislation until the result of the Devon and Cornwall, and of the Epsom and Croydon atmospheric railways were known;" or "But such a course, independent of all considerations of expediency, is evidently impracticable." We in our innocence supposed that this committee was instituted to inform the public of practicabilities, instead of indulging in speculations of impossibilities, or informing the public of their irrational and impracticable ideas.

One more extract or two will, we think, serve to give a pretty fair notion of the nature of the document before us, and its conclusive character, as grappling with the difficulties of the question, and informing the public on points deeply interesting to them in a commercial, social, and economical point of view. "With respect to expense, and to some other *contested* points, your committee do not feel themselves competent to report a decided opinion!" Not on *contested* points, forsooth! Why—for what, in the name of common sense, were they appointed? Was it to take a pleasure trip to Ireland, making a delightful excursion along the Dalkey line, feasted by railway directors, be well paid, return home, and then report on what every one knew before—on which there was no doubt, no question raised whatever? They are honest, at least, in telling us of their incompetency; but that, too, is but carrying out their principle of announcing notorious and undisputed facts. Again, the comparison between the two systems "must depend much on details, of which we are ignorant—much on scientific knowledge, which we do not possess." Poor old gentlemen, no one doubted it; but why were you selected? Why nominate yourselves, merely to make such an abject confession? But to the great decision—after these apologies, and extending to within a few lines of the conclusion, we had our misgivings as to the *finale*, and scarcely expected such a pregnant adjudication as the following:—"Your committee think, that there is ample evidence which would justify the adoption of *an atmospheric line*, at the present time!" *An* atmospheric line! "Your committee" was instituted to inquire into the broad question, Whether the atmospheric principle was so superior to the present locomotive system as to supersede it, and warrant its becoming a universal and exclusively-adopted system? The professions of its inventors were unlimited, and, if confirmed, must have caused its substitution for the present mode. The question propounded was—Are those professions true: will it effect such an enormous saving in expense, such increased safety for the lives of passengers, such facilities for traffic? If answered in the affirmative, the result must have been, not its adoption on a single line, but of the universal principle; and to this important specific question the answer is—"Try an atmospheric line." Truly, the public must be greatly obliged for this valuable information!—how delighted it must feel, scarcely less than by the following concluding paragraph:—"Your committee feel that experience alone can determine under what circumstances of traffic or of country, the preference to either system should be given!"

THE ATMOSPHERIC RAILWAY SYSTEM—MR. PILBROW AND M. CHAMEROY.

It has been asserted by some, that the Pilbrow method of atmospheric propulsion, or traction, is not *new*, but that it is precisely the same as that which has been adopted by M. Chameroy, in France. Though we have not had the pleasure of seeing M. Chameroy's method at work, yet we feel satisfied in pronouncing it remotely different from that of Mr. Pilbrow's. M. Chameroy's has a number of tubes, Mr. Pilbrow's has only one. M. Chameroy's has a valve, which requires considerable care in managing; Mr. Pilbrow's has no valve along the propulsion tube. M. Chameroy's plan connects the moving carriage directly with the tube; Mr. Pilbrow's connects the moving power indirectly. We refer our readers to our Numbers for March 29 and April 5, for a full description of Pilbrow's invention, which they can compare with the following description of M. Chameroy's, which, though shortly published by us, in October last, we now give in more minute detail, as it not only has received some modifications since our previous notice, but has elicited, in connection with Mr. Pilbrow's, considerable attention of late; and we are fully satisfied that our readers will, on a careful comparison of the two, admire Pilbrow's invention for its extreme *simplicity*, while they will also see that the numerous agents, and great complexity, of M. Chameroy's, at least appear objections to its extensive adoption.

COMPRESSED AIR, AS A MOTIVE POWER, APPLICABLE TO RAILWAYS—M. CHAMEROY'S SYSTEM.

We have had frequent occasion to advert to the numerous propositions, broached from time to time, for modifying the present, or creating a novel, principle, adapted to the purposes of locomotion. The valuable labours of more than one practical engineer on the atmospheric system promise to render it, eventually, the most applicable for railway travelling; and these, from time to time, we have sedulously laid before our readers, including the researches of several continental philosophers, and, under the impression that a detailed explanation of another system, lately introduced by an eminent French engineer, M. Chameroy, will, at the present moment, be doubly interesting, we are induced to give a succinct and popular description of its peculiar features and propositions.

It is well known that to M. Chameroy's researches, as an indefatigable engineer, is due one of the most useful discoveries of modern times—that of tubes in sheet-iron and bitumen—which, already applied to conductors of gas and water, is now proposed to be adapted to atmospheric railways. By the aid of his tubes, M. Chameroy transmits to great distances the power of stationary engines, and distributes usefully that power which produces the locomotion of waggons. The locomotive apparatus is thus ingeniously arranged:—A pipe of sheet iron and bitumen, of certain diameters, is placed in the ground, along the whole extent of a railway, and tested for ten atmospheres. This pipe is closed—that is to say, it has neither opening nor longitudinal valves, nor a valve for the supply of air: it is filled with compressed air, by means of stationary engines, either steam, hydraulic, or air. On this immense reservoir are placed branches, at distances of fifty to about one hundred metres; these branches, which end in the centre of the way, where they are solidly fixed, perform the office of pistons, and serve to distribute, at proper periods, the compressed air. The part of these branches which is fixed in the ground is furnished with a cock, carrying a lever; the other part, which passes above the surface of the ground, is composed of a pipe of rectangular sheet-iron, whose greater sides are parallel to the way. At the upper extremity of this flattened pipe is attached a gullet, at the top of which is affixed horizontally, and parallel to the way, a cylindrical tube, terminated between two cones, the one closed, and the other open, by means of several orifices, carrying leathern gear. This disposition of the branches forms one of the most ingenious parts of this apparatus, as a novel means of transmission of the power of stationary engines. It allows of the application of compressed air to the locomotion of trains by the aid of a moveable apparatus attached to the waggons. This apparatus is composed of metallic tubes, united to each other by flexible joints, in such a manner as to form only one articulated tube, to which is attached below a longitudinal opening, which is closed inside by a strap of leather, discharging the duty of a valve. Free in its entire length, this strap is supported at each end by two arms, rivetted at the extremities of the articulated tube. At each extremity of this tube, whose partitions are strengthened by stays, there is moreover attached a metallic valve, placed obliquely, and working on a rivet. At the anterior and posterior parts of the tube are affixed pins for the opening and shutting of the cocks of the branches. Other levers, placed under the hand of the conductor, are disposed so as to allow of the play of these pins and the valves. This tube so constructed is supported by wheels attached to a moveable train, or fixed under the waggons. The pipe is previously filled with air compressed to many atmospheres. The propelling tube is attached to the waggons, and fixed to a stationary piston, forming part of the first branch. The conductor then closes, by means of the levers, the anterior valve, and keeps the other open. These preparations being made, he opens the cock with his hand; the compressed air escaping immediately from the pipe, traverses the flattened pipe, the horizontal tube, and the orifices, and penetrates that part of the propelling tube, comprised between the closed valve and the gear. The compressed air having no means of action on the fixed piston forming the point of support, its influence is solely directed to the entire surface of the anterior valve. It is then that the propelling tube slides under the circular gear, and drags on the train to which it is attached. When the posterior extremity of the propeller arrives over the horizontal tube, a pin causes the cock to shut.

The pipe being closed, the propelling tube quits the first branch, and advances in power as it acquires speed; when it arrives on the second, the anterior valve is immediately raised by the closed cone; it slides on the horizontal tube, and closes again when it has passed the open cone. At the same instant the arm carrying the leather strap is directed by the lower guide; it passes, together with the strap, in the horizontal gullet, and is immediately replaced by the counterguide and by the piston. During this operation, the longitudinal opening of the propelling tube offers a free passage to the flattened pipe. As soon as the anterior valve has passed the open cone, and the valve reclosed itself, the pin placed at the head of the propeller causes the cock to work; the compressed air escaping anew from the pipe, acts upon the anterior valve, and gives a new impulse to the propelling tube, as well as to the train to which it is fastened. By means of these successive impulsives the train runs along the line without interruption. To regulate the speed of the train, and to take more or less motive power, the cocks, by means of the pins, are opened more or less. To stop, the effect of the pins is neutralised, and a restraint is employed upon them. When the train is on the point of arriving at its destination, its line is changed, so as to put it on that of its return and on one of its branches. To return, the valve is closed which was open, and that opened which was closed.

The advantages of the system are—first, economy in the construction of the line, inasmuch as the propeller does not cost a sixth of the locomotive; the cost per straight metre would be about sixty francs for a double line of railway: secondly, the operations can be performed at the same time on two lines with only one pipe: thirdly, this pipe being placed underground will be protected from injury; its keeping in repair will be nothing, and its passages can be easily kept clear: fourthly, this pipe, which is composed of tubes of sheet-iron and bitumen (which alone perfectly retain the compressed air), forms an immense reservoir, whence can be drawn at will the locomotive power necessary for the demands of the operation; this power can be slackened, decreased, or neutralised, in order to descend inclinations, or stop the progress of the train—in fact, this power cannot be employed but to a useful purpose: sixthly, the disposition of the propelling tube, which is articulated, will permit of the overcoming of curves of a small radius: seventhly, it will be capable of working several trains successively on the same line, and, consequently, of readily dispatching trains for assistance, or other urgent cases: eighthly, in opening the cocks, more or less, the power and speed can be increased, so as even to ascend steep gradient: lastly, this system of locomotion does not present one of those dangers and inconveniences which exist with locomotives; there will be no fear of explosion or fire; the disadvantages and inconvenience of the steam, smoke, and cinders, will be wholly removed and obviated.

Of all the systems of atmospheric railways which have lately occupied the attention of the public, that which we have above described appears to command the greatest notice, chiefly, no doubt, from the interesting communication of M. Arago to the Academy of Sciences respecting its merits and details. Two commissions have been appointed, the one by the Academy, and the other, more recently, by the Minister of Public Works, each of which are to make a separate report on the advantages of this invention. M. Chameroy has constructed a model, 135 metres in length, with which he can obtain a speed of ten metres a second. Many of the first engineers and practical scientific men have viewed it in operation, and he has since sent it for the use of the commissioners inquiring into its merits.

THE ATMOSPHERIC RAILWAY SYSTEM.

At the Institution of Civil Engineers, on Tuesday last, the discussion on the Atmospheric System of Railways, which had occupied the attention of the Institution for the two previous evenings, was renewed, by Mr. Bidder presenting a statement, in a tabular form, from which he clearly deduced the tractive force which the atmospheric system was capable of exerting over a pipe of a mile in length, and by taking from this the losses consequent on the friction and gravity of the train, showed that which was due to the resistance of the atmosphere, &c. His statements were proved by reference to the avowed experiments of Mr. Samuda. His investigations also enabled him to render conspicuous the loss arising from the friction of the air within the tube, which accounted satisfactorily for some apparent discrepancies in the acceleration of velocity of different trains over the mile at the end of the tube. His views on this point were confirmed by the experiments of Mr. C. H. Gregory, and those published in the report of M. Mallet. The discussion of the basis of the deductions, reported by Mr. Stephenson, was then disposed of, with the decided and generally prevailing admission of its truth. The commercial part of the question was then entered upon, and the case of the Norwich and Yarmouth Railway was quoted as one of the most simple character, and one which would be of frequent occurrence. It was shown, by facts and authenticated statements of first cost and expense of working, that if Mr. Samuda's estimate for the apparatus, as applied to the projected Croydon line, was diminished by half, or from 6000*l.* to 3000*l.* per mile, the mere interest of the outlay, at 5 per cent., would amount to 10*l.* per mile per annum more than the present cost of locomotive power on the Norwich and Yarmouth line. It had been stated before the Atmospheric Committee of the House of Commons, that a much smaller apparatus could be constructed to do the work of this line. The fallacy of his assumption, and the calculations, were analysed and strongly exposed, inasmuch as it was shown to be mechanically impossible for the contrivance to peform the amount of work for which it was designed, and that that work was not analogous to that which was required by the traffic of the Yarmouth and Norwich Railway, inasmuch as the bulk of the traffic was, of necessity, by particular trains, which rendered their weight about four times greater than had been estimated for. The case of the necessity of a swing bridge, of 100 feet, opening for the passage of vessels, as at Yarmouth, was suggested as a mechanical problem, upon which the adherents of the atmospheric system might be advantageously exercised. On reverting to the loss arising from the friction of the air in the pipes, two of the principal mining engineers of England characterised it, from their experience in the ventilation of mines, as being of vital importance to the atmospheric system. The speed attained on the South Shields and the Newcastle and Carlisle railways, with the usual number of stoppages, were given, and the deduction substantiated, that a velocity of upwards of thirty miles per hour was attained, within a distance of three quarters of a mile from the starting point. Experiments were also quoted, showing, 1st, that a locomotive train could be stopped in a shorter distance than a train on the atmospheric railway, the nett weight, speed, and number of brakesmen, being identical; and 2nd, that the engine and tender alone were stopped in one-fourth of the distance that the train alone was stopped. The minor conveniences, of the diminution of dust and noise in the case of the atmospheric system, were incidentally alluded to, but were admitted not to be of great importance.

IMPROVEMENTS IN THE TRACTIVE POWER OF THE LOCOMOTIVE ENGINE.

The locomotive engine, with its enormous powers and rapidity of motion, is still, as regards its traction, a very imperfect machine, and it is stated by Professor Vignoles, in his lectures "On Railroads," as reported in the *Mining Journal*, that of seven tons, or 15,680 lbs., on the driving-wheels of a locomotive, not more than about 1000 lbs., or one-fifteenth part, are available for moving a load, owing to the deficiency of adhesion of the wheels on the rails. The points of adhesion are at present two hard surfaces—iron on iron—and hence the necessity of heaping an enormous weight on the wheels before the engine can be made effective for moving a load, even with this great sacrifice of power. The weight necessary to overcome this want of tractive power is another serious evil, causing a great increase in the strength and expense of the line on which it is to run, and, in fact, every additional pound of this otherwise unnecessary weight becomes literally a drawback up every ascent. By the same tractive power in much lighter engines, the construction and maintenance of the line would not entail so great an expense; and, by increasing the adhesive force in a considerable degree, steeper gradients might be overcome, and enormous sums, consequently, saved in the original construction of the road. To secure these desirable ends, a peculiarly constructed wheel has been invented, which, by running on a wider rail than those at present in use, and with a much larger amount of bearing surface, bids fair to remove, to a great extent, the serious evils so long complained of. This driving-wheel is formed of segments of tough elastic wood, such as ash, &c., filling up the interstices between the iron spokes, the circumference

being formed of other segments of hard wood, such as teak or African oak, firmly bound and bolted together with nuts and screws, through a circular iron band, thus binding the whole of the pieces forming the periphery together at the joinings with the pieces of tough wood radiating from the centre. The iron bands on each side are also divided into segments, in order to afford facility for taking to pieces and inserting new wooden sections when required, and thus enabling any portion to be repaired with ease and expedition; the circumference which is to bear on the rail is then stamped with transverse grooves, and coated with a preparation of marine glue and sand, which combines great hardness and toughness. The rails on which it is proposed these wheels should run are continuous lines of wood capped with what is termed the "edge rail," flattened towards the outside of the sleepers, and slightly inclined inwards, and giving a width of bearing surface of from five to eight inches as circumstances may require; this increased breadth of bearing surface will more equally disperse the weight on the rails, and render the wear and tear more uniform, while there is more elasticity, and considerably less expense than where the rails are constructed entirely of iron. With respect to the wear and tear of the surfaces of wheels of this construction, it is considered that on the engine completing the day's work, the preparation of marine glue and sand should be applied, which could be done in a very short time, and the wheel being properly coated in the first instance, and these applications continued, the fibres of the wood would be prevented from coming in contact with the surface of the rail. The advantages which the patentee calculates upon from the use of these wheels are as follows:—

A more equal distribution of the weight of the engine on the rails.
A great increase of the tractive force of the engine.
The capacity of ascending much steeper gradients.
Security from diminution of the tractive force consequent on the vicissitudes of weather.
Greatly reduced expense in construction of the railroad—cuttings, tunnellings, and deep embankments being less necessary, and a less quantity of iron being required for the rails.
A smoother and more equable motion of the engine and carriages, from the less rigid character of the rail.
Less injury to the engine and carriages from concussions, and, consequently, less expense in maintaining the efficiency of the whole system.

The plan proposed, we think, offers considerable advantages, but in the absence of any data resulting from actual experiment, we are not, of course, enabled to state the extent of those advantages in proportion to the plan at present in use; the subject is, however, of the utmost importance, and well worthy the consideration and even experimental investigation of those interested in the numerous lines of railroad now in contemplation.

BANKS'S MODE OF RENEWING THE WORKING SURFACE OF RAILWAY WHEELS.—The continually increasing use of this mode of renewing railway wheels, instead of the old plan of merely turning the surfaces true, is daily proving that the amount of saving which was first stated by the patentee would be the result of his plan, falls considerably short of the actual facts. From the most accurate experiments which increased experience has enabled him to make, it is confidently stated that 55 per cent. is the minimum average saving which is affected by their use, and when the enormous item of expense which wheels make in the amount of railway expenses, is considered, the importance of the subject for the consideration of all railway boards is manifest. There are, however, we believe, now comparatively but few lines where the principle is not adopted, and the numerous testimonials from engineers, &c., is a sure criterion that this is one of the few inventions which has completely answered the patentee's most sanguine expectations, and one which has given every satisfaction wherever it has been adopted.

DAVID DAVIES'S RAILWAY CARRIAGE BREAK.—At the Society of Arts, on Wednesday evening last, a paper was read, descriptive of a new railway carriage break, the invention of Mr. David Davies, and which we may safely state possesses advantages found in no other yet introduced, and which, at the same time, is free from all the serious objections hitherto urged against the old carriage breaks. Mr. Davies having explained the mechanism of his invention by a large diagram on the wall, Mr. Rotch, V.P., made some interesting and judicious remarks on the subject; to prepare his hearers for appreciating the advantages of this invention, he explained to them the action of the old break—viz., that of a wedge being driven down between the peripheries of the fore and hind wheels; the instant this action took place, a powerful strain was produced on the end of the axle, against which one side of the nave of the wheel was pressed, and the free side of the circumference still having an inclination to revolve, a twisting action was the result, which eventually produced a fracture of the axle. Another objection was the shaking and groaning noise to which the passengers in every break carriage were subject, causing considerable fear among the females, and inducing all parties who had been at all experienced in railway travelling to avoid the break carriage as they would a perfect nuisance. Mr. Davies's break removes all these objections; it consists of a series of eight levers, placed beneath the framework of the carriage, one end of each projecting to a level with the circumference of the wheels; these levers each turn on a fulcrum in the outer rail of the frame—thus making the short arm of the lever that which grips the wheel, and the long one projecting within the framework; those long arms are connected to two cross levers, which are acted upon by a diagonal bar, which, being put in motion by a winch handle on the roof acting on a screw, each of the four wheels are grasped at two opposite points, the same as if clasped by a pair of pincers, by which grip a far greater power is applied with the most perfect ease—while the pressure being equally distributed, there is no strain upon the axle, and the motion of the carriage is checked with the greatest possible rapidity. The whole arrangement of the levers is of the most simple description, and so smooth and perfect is the action, that a gentleman present, who had paid much attention to the working of this break, stated he had endeavoured, under all circumstances, to detect any noise or grinding in its action both in the carriage and on the roof, but that in all cases it worked perfectly smooth, and free from anything which could be of any possible annoyance; and, further, that while descending inclines with the old break, the guard was compelled to keep up a firm pressure with his hands to retain the break in its place, while the action of the screw in the one described was so perfect, that the moment the break was applied, the handle might be left without any fear of slipping, or the levers losing their hold. It appears there are six carriages on the London and Birmingham line to which these breaks are affixed, and which are found to be superior to all the others—one break carriage in a train being found as effective on the Euston incline as three on the old system. Mr. Rotch expressed some surprise that an invention of so much importance to the public safety and convenience, was not more warmly supported by the directors of railways generally, or that even on the London and Birmingham line, where it was found so efficient, they had not applied it to all their carriages; much, however, as they had the welfare of the public at heart, they were compelled to consult their engineers, which circumstance too often prevented the introduction of useful inventions. He was, however, happy to say, since he had been in the room a letter had been handed to Mr. Davies, from an influential party connected with the London and Birmingham line, in which ample testimony was borne to the value of this break, and an opinion expressing that, by confining the cost to a moderate amount, they must make their way in all railway establishments.

RAILWAY IMPROVEMENTS.—The numerous proposals for railway extension in all parts of the country now before the public, appears to be met by a spirit of scientific research and mechanical improvement in the formation of lines and modes of working, and these inventions, let them be of what kind they may, are well worthy the attentive consideration, not only of parties interested in new lines, but of those connected with the established companies. Many inventions which have already been before the public, and others which are daily being secured by patents, will, no doubt, when fully developed, effect a great change in the principles of railway travelling, tending to secure the maximum rate of speed, with the most perfect safety and judicious economy. A description of one important improvement—viz., railway breaks—will be found in another column, and we are happy to find, that a model on Prosser's patent bevel safety wheel plan is about being laid down on Wimbledon Common, on a large scale, to give the public an opportunity of fairly judging of its safety, speed, power, and the great saving effected by this plan, both in the first cost of a line, in its maintenance afterwards, and the proportionate low amount of the working expenses. This experimental line will be two miles in length, one portion composed of iron, and the other of wood, to shew its applicability to both kinds of rail; it will contain gradients from 1 in 50 to 1 in 120, and a curve of half a mile in length, with a radius of ten chains. Our railway readers will call to mind our several notices of the working of a small experimental line, laid down near Vauxhall-bridge about twelve months since, which, though very short, and worked under various disadvantages, gave undoubted proof of possessing inherent merits, which time and experience would develope. We are glad to find that the Patent Railway Guide Wheel Company have taken this spirited course; a line two miles long will give all the data of a complete working line, and, we have no doubt, a few weeks' operations will convince the engineering world, that this plan does possess advantages, which will render its adoption greatly beneficial to railway proprietors and the public. We shall pay this line some visits of inspection, and report its performances.

RAILROAD INVESTMENT BANK.—We perceive that a banking company is about to be formed for the investment of money in railroad loans and shares, to be registered provisionally, and incorporated by Act of Parliament. The project is founded on the assumption, that railroad affairs are in the aggregate productive of large profits, while taken singly they are hazardous, and their success contingent; and that their capital, applied as one concern, would have returned a high rate of interest, and also increased considerably. The foundation of a bank to effect this is therefore deemed desirable, inasmuch as railroads are permanent objects of interest to the community; and being great subsidiaries to commerce, and objects of safe investment, demanding the protection of government, and therefore well worthy of any steps which would extend its sphere of usefulness and profit.

RAILROADS IN SPAIN.

[Continuation of the Letter of "C. L. W." from last week's Journal.]

From a very distant period we have mention of copper and lead mines in this principality, but we have no data to prove the exact quantity produced, although, in 1780, we have the following account, from Hoppensack, of the average amount of produce of the mines in Spain:—

	Kilogrammes.	Value.
Mercury	900,000	£187,500
Lead	1,600,000	33,334
Iron	9,000,000	75,000
Copper	15,000	1,250
Antimony	300,000	27,500
Zinc	125,000	2,083
Total		£326,667

This statement is far below their present realisation. The following mines alone, the property of the monarchy, are estimated in value by the Government as follows:—

	Reals vellon.		
Lead mines of Linares	210,000,000	or	£2,187,500
Quicksilver mines of Almaden	216,000,000	„	2,250,000
Copper mines of Rio Tinto	29,082,000	„	302,937
Total			£4,740,437

Doubtless, the Asturias may lay claim to a great deal of the produce in Hoppensack's statement, but the sinews of her future importance are in her inexhaustible quarries of ironstone and beds of coal; by these she will fulfil the prediction of a talented writer—"That the Asturias will one day, and not long, be one of the most important provinces in Spain."

There are, as I stated in my previous letter, several collieries at present at work, from which coals, to the amount of 50,000 quintals yearly, have been sent to Gijon for exportation. The principal portion of this quantity has been supplied from the mines of the late M. Aguada, who considered this business sufficiently profitable to lay down a line of road from them to the coast, a distance of twenty-two miles, at his own expense. Had he, instead of making this road for common traction, constructed a railroad, he might have defied competition with England. The collieries of M. Aguada, as well as the others, are of minor importance compared with those of the Asturian Mining Company. As the projected Royal North of Spain Railroad will pass close to their mines, they will, of course, be a main support in traffic to the railroad: I will, therefore, proceed to their consideration. To give your readers some statistical opinions of the enormous fields of coal belonging to this company, situated at Mières, Tudela, and La Foz, I will select quotations from actual surveys, from a work of M. Schultz, Director-General of Mines, on the coal formation of this neighbourhood:—

"*Fifth Formation.*—The coal basin of the centre of the Asturias, in the jurisdiction of Riosa, Pola de Luna, Mières, and Tudela. This basin forms a most extensive group, having more than sixty distinct seams, generally of the very best quality, approaching to the vertical, and extending several leagues, and at a considerable elevation above the neighbouring rivers. This central group of the carboniferous formation of the Asturias is so rich and extensive, that it may fairly be called inexhaustible for many ages—even should the exportation amount to a million tons per annum."

This subject is more fully entered into in a report I have been favoured with a sight of, from the engineers to the Asturian Mining Company—Messrs. Manby Brothers:—"The extent of this coal formation far exceeds those of Staffordshire or Wales; in length it reaches from the frontiers of France to those of Portugal, and in breadth we have ascertained that it is at least eight or ten miles, and, probably, much more; but it lies, generally speaking, too high in the mountains and too far from the sea to be worked in the present state of viability of this country, or with such means as a private company could bring to bear; but that portion of the coal-field between Siero and Riosa (including Tudela, Mières, Siero, Riosa, La Foz, and Lama) forms an exception, inasmuch as it approaches much nearer to the sea than any other part of the northern coast of Spain, so far as we have been able to ascertain. In addition to the principal coal-field there is another coal formation, much more limited in extent and of very inferior quality, but much nearer the sea, at Arnao—a little to the west of Aviles, at Ferrones, and at Santo Firmé. There are many more similar small basins along the coast—namely close to Gijon, at Vinon, near Villaviciosa, and between Infiesto and Las Arriondas. The collieries (the three that are worked) yield a description of coal unfit for metallurgical purposes or steam navigation, but suitable to lime burning, fixed engines, and common purposes—they cannot come into competition with English coal. The Pyrenean coal-field approaches the coast of the Asturias in the shape of a horse-shoe, between the ports of Villaviciosa and San Esteban. M. Aguado, guided by M. Schultz, a very able geologist and mineralogist, was the first to attempt to work this portion of it. The portion of coal-field before alluded to may be divided into three districts—the first that of Riosa to Valporquero, containing the Asturian Mining Company's concessions, is about seven miles long; the second, from Valporquero to Lama, is nearly seven miles long; the third, from Lama to Siero and Nava, is about the same length. The first division of the coal-field is eight or ten miles wide, containing upwards of 100 seams of coal, which naturally differ in quality. It contains an immense quantity of coal; the seams, which are at Lama, pass parallel to the Nalon and join the Mières, only a portion of these cross the Mières and the Riosa. This small fraction of the coal-field, which is worked, contains thirty-feet of coal in 120 yards of ground; the crops of these seams have been worked, and found regular for 2000 yards; they lay in a mountain, which gives them an average height of 150 yards above drainage level—thus fifty acres of ground alone contains 3,000,000 tons of coal. To the north-west of this colliery, and after 100 yards of barren rock, we have three other seams of coal—together twelve feet thick in 100 yards of ground. To the south-east, in the concessions of *Los Perales el Gomial el Fondon and Las Havas*, there are twenty-three more seams, amounting to about seventy-eight feet in thickness in about 350 yards of ground; thus, at Lama, there are forty-four seams of coal—together 120 feet thick—that crop out in about 700 yards of ground, and this is not a tenth of the breadth of the coal-field. The coal is worked much cheaper than in England or Wales."

Of the quality of these coals, M. Paillette gives the following analysis:

	Carbon.	Ashes.	Volatile matter.
In the large Pyrenean coal-field—			
Tudela	65·8	1·93	32·2
Mières	57·6	3·	39·4
Lama	56·6889	1·704	41·5075
Oloniego	60·40	3·05	36·55
In the coal-field nearer the sea—			
Arnao	45·69	9·142	45·111
Ferrones	46·984	6·101	46·91

"The analysis in M. Paillette's work are taken from crop working, and, as the levels will reach the coal further in the ground, its quality will improve. Most of the seams make very good hard coke. This coal formation contains also a great many seams of carbonate of iron; in five instances I have met with upwards of ten inches to the yard of ground, which is generally considered in England a workable level; but I think no importance need be attached to this, so common are the lodes of specular iron ore, hematites and hydrates, which are to be worked much cheaper than carbonates can possibly be."

Another authority, Mr. Michael Forster, coal mining engineer, Butterknowle, Durham, in a report on this coal-field, estimates the quantity of coal (in a portion only of the first division) "will supply an annual vend of 100,000 tons of coal (large and small) for upwards of forty-seven years. The coal (he says) is of a bituminous quality, yielding much flame in burning—capable of making good coke for the manufacture of iron—well adapted for gas and household purposes—of sufficient hardness to bear carriage—and is, in my opinion, equal in quality to the coals sent from the north of England to continental markets.

"The produce of these coal mines may, in my opinion, be sent at the price hereafter mentioned (12s. 6d. per ton for the best coal on board) as far northward as Ushant, on the French coast, where it will be met by the coals from the north of England and Belgium—thus including the intermediate ports of Santander, Bilboa, San Sebastian, and other minor ports on the coast of Spain; Bayonne, Bordeaux, L'Orient, and other ports on the west coast of France; to the west and southwards, the whole of the north coast of Spain, the coast of Portugal, and the west coast of Spain, appear to me also to be clearly open as a market for the produce of these mines. There is a large quantity of rich iron ore in these concessions."

From Mr. John Thomas Cooper (Lecturer on Chemistry and Chemical Assayist on the subject), the following will show the results of a very careful chemical examination of three of the veins:—

Cuera, or one-yard coal.

Coke ..... 68·2	Carbon, 66.	
	Earthy matter and oxide of iron, 2·2.	
Volatile matter .. 31·8	Water, gaseous products, and sulphur.	

Ensanuelo, or three-yard coal.

Coke ..... 69·0	Carbon, 67·9.	
	Earthy matter and oxide of iron, 1·1.	
Volatile matter .. 30·9	Water, gaseous products, and sulphur.	

Viesa Alta, or four-yard coal.

Coke ..... 66·0	Carbon, 63·5.	
	Earthy matter and oxide of iron, 2·5.	
Volatile matter .. 33·9	Water, gaseous products, and sulphur.	

The quantity of sulphur is pretty uniform in the whole of the specimens, and does not amount, in any case, to ½ per cent.

"From these examinations, I am led to the conclusion, that the above three qualities of coal are, in every respect, as well adapted for the purpose of raising steam for foundry, forge, and other similar uses—for the manufacture of gas, and for household purposes, as any of the coals of Great Britain that have ever come under my observation. From the quantity of both ironstone and ore with which the Tudela concessions abound, my attention was naturally directed to the possibility of manufacturing iron in that district, by the erection of blast-furnaces. There is but one blast-furnace of any importance in the Peninsula, and Spain is thus virtually dependent for the supply of foundry iron on foreign nations. Now, as in the Tudela concessions, there exists ironstone of good quality, as the subjoined analysis will show, and in sufficient quantity; and, as a limestone exists there in great abundance, with a fire-stone very close at hand, which I conceive to be of good quality, there is a combination of every requisite for the erection of blast-furnaces, and, consequently, for the manufacture of pig-iron; and, in my opinion, at a cost that will yield a large remunerating profit."

Analysis of Ironstone.

Protoxide of iron	44·2	= Iron 31·4
Earthy matter, consisting of alumina, silica, and a trace of manganese	31·0	
Lime	00·6	
Carbonic acid and water	23·0	
Carbonaceous matter	·5	—99·3
Loss	·7	
	100·0	

Analysis of Three Specimens of Iron Ores.

Specimen marked No. 1.

Peroxide of iron, with a trace of manganese	85·5	= Iron 59·9
Alumina, silica, and a trace of lime	14·5	
	100·0	

No. 2.

Peroxide of iron, and a trace of manganese	54·0	= Iron 37·8
Alumina, with a large quantity of silica	40·0	
Water	6·0	
	100·0	

No. 3.

Peroxide of iron	79·2	= Iron 55·5
Alumina, with a small quantity of silica	8·0	
Water	12·8	
	100·0	

These statements will prove facts before stated, and must convince your readers of the value of the Asturias as a mineral country, and the great traffic which must necessarily accrue to the Royal North of Spain Railway from these sources alone, seeing that it will pass longitudinally through a coal and iron district of eight miles and more in length.

In apologising to you for the length of this letter, I will close this subject for the present. In justice, however, to two statements put forth by your correspondent, it will be well to notice, that the Government Trubia furnaces (situated a little to the west of Oviedo) were built forty-five years ago, and were used for a long period; there are now at least 2000 tons of cast-iron there. In reference to the following remark on the patrons of the above railway ("the first on the list, Don Manuel de Gaviria, Vice-President of the Bank of Isabella, in a letter, dated the 27th of March, published in *El Clamor Publico*, on the 28th, denies all participation in the projected scheme—possibly we may hear of other seceders"), I would refer your readers to the official advertisement, which appeared in the *Times* of the 7th April, in answer to it; this shows "the vacancy caused by the retirement of Don Manuel de Gaviria has been most satisfactorily filled by the selection of Senor Carriquiri, deputy and banker." The port of Aviles, one of the termini of this line, is a good natural harbour, and will not require a considerable sum of money to render it one of the finest and safest ports on the coast of Biscay, as it possesses no rocky bar or other difficult obstacle.

C. L. W.

RAILWAY SIGNAL LAMPS.

SIR,—Observing in the *Mining Journal* of the 5th ult., a description and wood cut of a signal lamp, allow me to observe, that such lamp is neither new or original; but has been in existence above five years, and was put aside by the Edinburgh and Glasgow Railway directors, to make room for a far superior one, by the same manufacturer. The lamp in question is similar to the common circular hand signal lamp of English make, with the plan of another party attached thereto, being merely capable of showing three lights (two coloured and one plain) in one direction. Now, Mr. Editor, I beg to call your attention to the fact, that there is in existence a "new" signal lamp, which, however, has not been patronised at the head quarters of the railway in question, and, of course, whatever its merits in a public point of view, stood no chance in that quarter. Now, this lamp will give three signals to one of the above-mentioned old lamp, and at one and the same moment will present from four fronts either of three coloured signals—a plan which, if the police and plate layers' lamps were on the same principle, they could intimate both up and down the line, and in cross directions, the necessity of stopping any of the trains which were approaching, and thus prevent danger. In fact, this lamp *is* well worthy the attention of all railway boards, for its economy, facility of action, and safety.

A HATER OF PLAGIARISM.

Greenock, April 26.

THE IRONMASTERS, AND THE GRAND JUNCTION RAILWAY.—It will be remembered by our readers, that the Grand Junction Railway Company lately proposed to form a branch of thirteen miles extent, to connect the towns of Wednesbury and Dudley, while the Birmingham Canal Company have likewise broached a proposition for constructing a railway from Birmingham to Wolverhampton, with a branch to Dudley, thus effecting the same purpose, but with greater convenience to the latter town, as it will lessen the distance to eight and a half miles, instead of thirteen, as fixed on by the former company. As either project will most materially affect the interests of the extensive factories in the neighbourhood, the result of the rival claims of the companies is, as might have been expected, watched with intense anxiety by the proprietors there. In unison with this feeling, a numerous meeting of the iron and coal masters of the district was held at Birmingham, on the 25th ult., to discuss the merits of the two lines, and adopt such measures as might promote the one they should consider preferable. Philip Williams, Esq., being called to the chair, opened the proceedings of the meeting by reading the circular, which recommended that the iron and coal masters should use their best endeavours to support the line of rail proposed by the Birmingham Canal Company, to be constructed between Birmingham, Dudley, and Wolverhampton, and to resist, with their most strenuous oppositon, the Grand Junction scheme, for running the longer branch, by a much more circuitous route, between Wednesbury and Dudley.—R. Scott, Esq., M.P., observed, that a resolution had already been adopted by the Canal Company, setting forth the necessity of a railway through those particular districts, and enjoining their agents to introduce a bill, next session, into Parliament, to meet the requirement, at the same time expressing their determination to carry out uncompromisingly their undertaking, notwithstanding the opposition of any other company. Believing in the sincerity of these professions, he trusted the meeting would not separate, without substantially evincing their approval of the Canal Company's schemes.—Thomas Badger, Esq., as an ironmaster of Dudley, and having had several opportunities of observing the liberal conduct invariably pursued by the Birmingham Canal Company towards the important trade of those districts, would support them strenuously in their present measure, more especially as it promised to be a great benefit to the locality; while that of the Grand Junction Railway, originated only for private interest, and, conferring not the smallest advantage on Dudley, was wholly unworthy of their acceptance. He concluded by moving a resolution to the effect, that the Grand Junction Railway branch, from Fryar's Park to Dudley, be opposed, and a petition against it prepared and signed.—Mr. Sparrow, in seconding the resolution, avowed his opinion, that the Canal Company's scheme was one of the most favourable that had ever been brought before the district, and promised to entail incalculable advantages on all the works in the neighbourhood.—Mr. Thorneycroft moved that Messrs. P. Williams, Sparrow, Badger, and himself, should be appointed a deputation from the iron and coal masters of the district, to conduct the opposition against the Grand Junction branch.—The thanks of the meeting being then voted to the chairman, the meeting separated.

RAILWAY TRAFFIC RETURNS.

The following is the increase in traffic receipts, for the undermentioned twenty-two railways, during the sixteen weeks of the year ending 25th April, compared with those of the corresponding period last year:—

Birmingham and Gloucester	1542	London and Brighton	£5200
Chester and Birkenhead	1201	London and Croydon	3008
Eastern Counties	4980	London and South-Western	1670
Edinburgh and Glasgow	4349	Manchester and Birmingham	8269
Glasgow and Greenock	680	Manchester, Bolton, and Bury	1933
Glasgow, Paisley, and Ayr	4422	Manchester and Leeds	12984
Grand Junction	17592	Midland Company	28197
Great North of England	6180	Newcastle and Carlisle	2576
Great Western	29930	Preston and Wyre	2148
Liverpool and Manchester	11765	Sheffield and Manchester	2255
London and Birmingham	17413	York and North Midland	4641
		Total	£187,785

RAILWAYS IN IRELAND.—The rapid extension of railways, at home and abroad, is sufficiently evidenced by the advertisements which appear in our columns having reference to new undertakings, and while we do not *express* regret that capital should be taken out of this country to advantage other nations, yet it is gratifying to find that Ireland is not neglected, and that there is a union of *interest*, at least, displayed in this particular, where *capital* is required. We, doubtless, claim to ourselves (*that* is to say, on *this* side the channel) a greater accession of wealth, or surplus money, than, we believe, would for a moment be assumed as being possessed by, or, even so, likely to be appropriated to the advancement of Ireland by either residents or absentees, and delighted are we to find that the spirit abroad for embarking in railway undertakings has led to the application of capital to the "Sister Isle." Labour, and that honest labour, is to be acquired at an easy—nay, we might almost say, at an insignificant—cost; while the natural facilities afforded by the country, and the contiguity, in the greater portion of the lines, to stone quarries, and the absence of those extremes as apply to the cuttings and embankments, as also the gradients—the latter being less influenced, from the comparative low value of property intersected—lead us to believe that railways in Ireland hold out far more prospective advantage than many in England, Scotland, or Wales. Perhaps the latter nearest approaches Ireland, as by the formation of lines of railway an intercourse is given, and districts, now almost unknown to each other, become as neighbours, from the facility of communication afforded. We have on several occasions referred to railways in Ireland, and this week have to record, in addition, one proposed from New Ross to Carlow, with, as we are given to understand, a branch to Thomastown. The line will extend over something like thirty miles, the capital required being estimated at 300,000*l.*, in shares of 20*l.* each, with a deposit of 1*l.* 10s. per share. We think the capital somewhat limited, for although 10,000*l.* a mile may do the work required, yet it is well to be on the safe side, and there can be no difficulty in getting an odd *fifty*. Those who know the district, will at once admit the importance to be attached to the line, as affording the means of conveyance of the agricultural produce to a shipping port, not to advert to its locality to the Castle Comer and Queen's County, or, as it is generally termed, the Kilkenny coal district. The river Barrow at present is the medium of transit of butter ("Carlow butter"), flour, bacon, corn, &c., which would be transferred to a railway traffic; the population in the vicinity of Carlow and other points, is dense, and no reasonable doubt can be entertained, but that the line, once formed, will secure a return, which, while it will amply repay the shareholders, will be a blessing to that part of Ireland.

WATERFORD, WEXFORD, WICKLOW, AND DUBLIN RAILWAY.—The object of this line is to connect the metropolis of Ireland with the important ports of Wexford, Waterford, and Cork, and to afford to the inland counties the most direct route to South Wales, the south of England, and to London. It was brought under the consideration of the Board of Trade last year, but at too late a period to admit of all the necessary details being furnished to enable the Board to give their final decision upon the project, it was, therefore, recommended to be postponed for another session; but in their report they publish an extract from that of the railway commissioners of Ireland, recommending the coast as the best route from Dublin for a line to Wexford, in the event of the resources of the latter county being deemed sufficient to justify the undertaking: and this opinion is coupled with one from the Board of Trade, that should certain contingencies occur, the Wexford and Waterford line, through Wicklow and Arklow to Dublin, would be preferable to any other, especially as its constitution is so unexceptionably respectable This opinion is the more fully warranted and confirmed when it is considered, that, the line will give to the rich agricultural counties of Carlow and Kilkenny a remarkable facility for the transmission of their produce, through the important maritime towns of Wexford and Waterford to the great market for Irish provisions afforded by the dense mining populations of South Wales and Scotland, as well as to the Inland and manufacturing districts of England and the metropolis, and will facilitate the developement of the well-known mineral resources of the county Wicklow, abounding in copper, lead, and other ores, and afford them a ready access to the best markets; and, when we remember, how very imperfectly, at present, the rich and varied resources of Ireland have been developed, and how highly distinguished the district through which the proposed Waterford, Wexford, Wicklow, and Dublin Railway will pass, has long been for the possession of all the elements that constitute commercial and agricultural greatness, we think that, both on public and private grounds, the Waterford, Wexford, Wicklow, and Dublin line will prove both beneficial and profitable.

BELFAST AND COUNTY DOWN RAILWAY.—This company was originally formed to construct a railway from Belfast to Holywood, and from Belfast to Comber and Newtownards; but, in consequence of communications made to the committee, of the great advantages of an extension of the line to Downpatrick, it has been resolved to accede to this expressed opinion, and complete the entire line to that town, in all a distance of about thirty-four miles; a railway communication being thus opened between Belfast and the most populous and enterprising portion of the county Down. The great traffic between these important districts, hitherto divided between several precarious modes of communication both by sea and land, will be thus concentrated, and pass uninterruptedly on this line, thus at once greatly enchancing the interest of trade there, and the profits of the company; at the same time, equally undoubted advantages must ensue, by the opportunities afforded on the portion of the line from Comber to Newtownards, to the entire traffic of the rich and densely populated district of the county Down. From Newtownards there is every facility for an extension to Bangor, thus forming a ready connection with the greater part of England and Scotland, to the coasts of which, railways from the interior are being now constructed. The capital necessary for the whole project is estimated at 400,000*l.*, which it is proposed to raise by the issue of 8000 shares at 5*l.* each.

GREAT WESTERN AND WYCOMBE JUNCTION RAILWAY.—The object of this line is to afford to Wycombe and a large population in South Buckinghamshire the important advantages of railway communication with the metropolis and other parts of the kingdom The town of High Wycombe is situate on the high road from London to Oxford and Cheltenham, and is the market for an extensive agricultural district, the produce of which has long contributed to the supply of the metropolis. In the article of coal a large traffic may be fairly anticipated, as the inhabitants of the districts through which the line will pass, amounting to upwards of 40,000, are at present provided with this commodity under the most disadvantageous circumstances, and at a consequent high rate; while, by the proposed rail, a constant supply of the best seaborne, as well as Welsh and Irish coal, would be effected at a greatly reduced charge. The company reserve the right to enter into an engagement to lease the line, when completed, to the Great Western Company, or to make such other arrangements as may subsequently appear advisable.

CLARENCE RAILWAY COMPANY.—At a meeting of the proprietors of this company, held at the George and Vulture Tavern, Cornhill, on Tuesday, the 29th ult., called for the purpose of authorising the issue of Government loan shares, to raise capital for paying off the 70,000*l.* due the Exchequer Loan Commissioners, the plan proposed by the committee was adopted. This sum of 70,000*l.* is to be raised by the issue of 7000 shares, of 10*l.* each, bearing interest at 4 per cent., to have priority over all the other shares, and to be divided *pro rata* among the shareholders, by which plan the difference in the interest will be saved, and the sum by the former arrangement, paid off yearly to the commissioners, will at once be left for distribution among the proprietors.

PATENT TILE-MAKING MACHINE.—Among the models in the gallery of the Royal Polytechnic Institution, there is a patent machine for making tiles. This machine is portable, and can be taken to pieces, and put together again, in a very short time; is worked by hand, water, or steam-power, and is complete within itself. The mould for forming sockets on the pipes is new, and perfect in its operation. From the simplicity of its horizontal movement, the machine is not liable to derangement; and, as it throws itself out of gear as soon as all the clay is worked out of the container, it is not easily injured. The fixed container is expeditiously filled; and, being worked by one man or two boys, is capable of producing from 5000 to 7000 drain-tiles, of the ordinary size, per day. One man is required to work it, and one boy to take off the pipes or tiles. All stones in the clay are crushed to pieces, without retarding the movement; and these are the only machines hitherto offered to the public for which, with most clays, no previous preparation is required—an expense generally greater than the cost of making. The machine, slightly altered, also makes bricks equally well.

Original Correspondence.

SMART'S PATENT CONVEX PADDLE FLOAT.

SIR,—I perceived in the *Mining Journal*, of Saturday week, a notice of an application of Mr. Robert Smart's patent convex paddle float to the *Rose*, a fine ship of 220 horse-power, trading between Bristol and Cork, and was much pleased with the intelligence. The paddle-wheels of steamships have not hitherto had that degree of attention bestowed on them, of which they so much stand in need; although considerable ingenuity and mechanical talent have been displayed in the construction of wheels with rotating floats, the rotation being effected by means of radii, or arms fixed to the axle of the wheel, for a more particular description of which, I beg to refer your readers to Lardner's admirable *Essay on the Steam Engine*. The object of this invention is, to do away with back water, and cause the float to act at its most efficient angle, during its progress through the fluid, all which has been, in a certain degree, attained; but the complexity thus necessarily introduced, much more than counter-balances the good effects that would otherwise result from the use of revolving floats. Mr. Smart's patented invention, on the contrary, is particularly distinguished by its *simplicity*, which has secured for it adoption, in preference to any other existing plan. It consists of a curved or convex piece of wrought-iron of the necessary area, and securely fastened to the paddle-rings, in a manner so as to secure the greatest stability. The complete success of this float, as demonstrated in the case of the *Shamrock*, the speed of which steam-ship has been accelerated by, at least, one and a quarter nautical miles per hour, and other important advantages necessarily attendant on an increase of speed attained, should be considered as affording sufficient, indeed most convincing, proof of its superior qualities. It should also be recollected that the success attendant on the attempt made by the commander of this steam-ship, to relieve the *Roscius* liner, from her most perilous situation on the Arklow Bank, has been considered to be to a great extent attributable to the peculiar effectiveness of the convex metallic float, with which that steamer had previously been provided. The *Shamrock* has now steamed upwards of 35,000 miles since the application of Smart's patent float, and not the slightest accident has occurred to the wheels, or the least derangement of the floats taken place. Such extraordinary and unprecedented stability, which may be ensured at so very trifling a cost, added to the greatly-increased velocity to be acquired by its use, should be sufficiently convincing to the proprietors of all steam-ships, fitted on the paddle-wheel principle; and whilst on this subject, let me add, there appears but little chance of the paddle, when aided by these most important adjuncts, being superseded—at least, in steam-ships performing coasting voyages—for, whilst the screw, for ocean-going steamers, may offer some advantages, its competitor, the wheel, offers many more substantial ones, at least, to all steam-ships engaged in general trade, and liable, occasionally or periodically, to take the ground in dry harbours. I am not here about to enter on a discussion of the comparative excellencies or defects of these rival machines; but to all interested in any way in steam-navigation, I would say (and that most deliberately and advisedly), hesitate before you pronounce a verdict against that long-tried and faithful servant the paddle-wheel, and ponder again and again on the immense advantage given to *this* propeller, by means of Smart's elliptical-convex metallic paddle float.—*Swansea, April* 28. OBSERVATOR.

P.S.—I have seen, and can bear testimony to, testimonials emanating from individuals, whose opinions on this subject all must defer to, eulogising this form of float most highly, and, I will add, that such testimonials are exceedingly numerous, and, I should say, ought *alone* to form a most convincing proof of the soundness of the principle on which these floats are constructed.

IMPROVEMENTS IN STEAM NAVIGATION.

SIR,—There is yet great improvement to be made in the construction of steam-boats, both as regards draught and velocity of sailing. It is obvious to me, that, as regards the latter, the paddles are placed too far forward; were they midway between the stem and the stern of the vessel, not only would the sailing properties be increased, but the vessel be turned round more rapidly, and in a less space. The further the paddle-wheels are from the stern of the vessel, a greater weight is to be drawn through the water; this cannot be better illustrated than by placing the paddles still nearer the stem than where they are at present fixed, and then calculate the additional drag of the vessel through the water. By the improvement suggested, an engine of less power would be required. R. S.

Newcastle April 19.

[ADVERTISEMENT.]

TO THE SHAREHOLDERS OF THE REVERSIONARY INTEREST SOCIETY.

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LADIES AND GENTLEMEN,—It is with reluctance that I trouble you with this address, but the newspapers having taken notice of the extraordinary circumstances under which your directors have, so far as they can, removed me from my office as your solicitor, I am compelled to lay those circumstances before you, my own professional honour, as well as your pecuniary interests, being deeply involved in the result. In the autumn of 1843, I received the instructions of your directors to solicit an Act of Parliament for extending the capital of the society; I followed these instructions, and, with the assent of the directors, addressed to each of you a circular, offering such explanations as you might require. I prepared the bill, and submitted it to the counsel of the society; they introduced two clauses, having for their special object the protection of the shareholders; the purpose of the one was to enable absent proprietors to vote by proxy, there being no less than 65 ladies, and 183 residents in the country, out of a list of 328 shareholders. The other clause was to secure an equitable apportionment of the future profits of the society among the old and new shareholders. In consequence of the circular, many shareholders applied to me for information about the bill; among the rest were a gentleman holding exalted judicial rank, and Mr. Sidebottom and Mr. Cator, both of the Chancery bar. I received the draught of the bill, approved by counsel, and containing the proxy and appropriation clauses, on the evening of Thursday, the 15th of February, 1844. On the following morning, I caused the directors to be summoned to consider it, but they did not meet before Wednesday, the 21st of February, when, contrary to my judgment, as well as to the judgment of your counsel, they expunged the proxy and appropriation clauses, and, substituting for them a future arrangement of the principle of appropriation, they directed me to proceed. I did not feel at liberty to disobey their instructions, but neither did I feel at liberty to conceal from the gentlemen I have named that the bill had been presented in this mutilated form. I refrain from describing the process by which my communication with them reached the board. I was desired to attend the board, and, without apprising me of the information they had secretly obtained, they asked me if I was aware of any opposition to the bill? I replied that some very influential parties were dissatisfied with the erasure of the proxy and appropriation clauses, but that I was not aware of any intention to petition against it; they desired me to invite these parties to a conference upon the clauses, and the learned judge and Mr. Sidebottom attended them accordingly; when, instead of entering upon the proposed discussion, they abruptly broke off the interview, by informing them that, "as I had thrown off the mask, and they could no longer repose confidence in me, they had determined to abandon the bill." They followed up this insulting imputation with instructions to me to abandon it, which instructions I obeyed, after proving compliance with the Standing Orders; within three days they changed their minds, and revoked their instructions, but, shortly afterwards, Mr. Alderman Wilson, upon other grounds of objection, petitioned against it, and finally, at a meeting of the shareholders, on the 20th of June, it was resolved by acclamation to proceed with it no further. A committee of the shareholders was then appointed, to inquire into these matters, and on the 12th day of February, 1845, this committee made a report, but this report was not satisfactory to the meeting, and it was resolved, at an extraordinary general court, that the directors should reduce to writing their complaints against me, and allowing me fourteen days' time to reply, that both our statements should be printed, and sent to you for your information. I was not allowed to be present at this meeting, nor yet at a court on the 26th instant, which was called by the directors to rescind the resolutions of the first meeting, and which was numerously attended by their personal friends, though by a comparatively small part of your body—in fact, I have been debarred by the directors from every opportunity of meeting you, or of explaining to you the facts; nor have I, from first to last, been allowed any opportunity of being heard, or even been informed of the cause of complaint against me, but it has been industriously circulated, upon no better foundation than the preceding facts, that I have thwarted the directors—have endeavonred to set up a paramount authority to theirs, which must necessarily impede the successful operations of the society—and have violated professional honour, by betraying the confidence of my clients; acting upon these groundless assumptions, the directors have resolved to remove me, unheard, and (openly) unaccused.

In answer to the last and most serious of these accusations, I am willing to rest my defence upon the opinion of the present Chief Baron of the Court of Exchequer, given upon a full statement of the case. It is as follows:—

Guildford-street, March 20, 1844.

MY DEAR SIR GEORGE,—The question you have proposed to me is not a professional one, to be answered as a lawyer, but to be responded to as a friend and gentleman. Under the circumstances disclosed in the case, I do not see how you could have acted otherwise than you did. The solicitor to the society is, I think, bound to consider the interests of all the members *as a body*. He is not the servant or slave of the directors merely, but the adviser of the whole association; and in your case, being (as you were) the founder of the scheme, you had your own honour and character to protect, as well as a duty to discharge towards the governing body. You must accept this note instead of an answer to your case (which I return), and believe me, with much respect,

Most faithfully yours,

To Sir G. Stephen, &c. FREDERICK POLLOCK.

In answer to the other charges, I reply that they are utterly groundless and imaginary; that in no instance whatever have I ever opposed or disobeyed the instructions of the board, whatever they might be; nor have I, for at least ten years past, ever been admitted or invited to any intercourse with the board, except to answer specific inquiries on questions strictly legal. The question, then, resolves itself into this—whether, when in the discharge of my professional duty, I have reason to believe that your interests are seriously prejudiced by the conduct of the directors, I am, nevertheless, bound to remain silent, and conceal the fact from you; or whether I am bound by my retainer, while I obey the instructions of the directors, as your appointed agents, to answer the inquiries of you who are their constituents, upon the subject of your legal affairs?—in a word, whether I owe a separate confidence to them, operating, in my own judgment, seriously to your prejudice?—I admit to the fullest extent, nor have I ever disputed, that the directors are fully invested with powers to control and govern the affairs of your associated body, nor do they owe any deference to me, except so far as your legal interests are involved; but I derive my retainer from the same source from which they derive their authority. You appointed me your solicitor by your Deed of Settlement; I have been paid by your money, and having received both my retainer and my fee from you, I am bound by my professional oath, not only to protect your interests on every occasion on which I am professionally engaged for you, but to repudiate all confidence apart from you, or that may shackle my independence as your legal adviser. In most companies the rule is different, because the solicitor is an officer appointed by the directors especially to advise themselves, and not by the shareholders, but I believe you are all aware that I was appointed by yourselves, and that I was the projector of this society; I founded it myself; I was myself the first proprietor, and I named all the first directors—some of them at their own solicitation; in this respect my position is unique, and not less so in another—that all the essential business of the society, of a practical nature (excepting only the bookkeeping and the disposition of your funds, and the negotiations for your purchases), has for twenty-two years been transacted entirely by myself; that I have transacted it with skill and safety is attested by the report of the late committee of inquiry, although I have been excluded from all share in carrying out the principles upon which it is founded, and which certainly have not been carried out in accordance with my views as the founder; but any consideration for my opinion on such points is only matter of courtesy, nor have I ever claimed, nor do I claim it in any way whatever as a matter of right: still I am doubly responsible to you, both as the projector in whom you originally confided, and as the solicitor to whom you intrusted the professional care of your interests; how is it possible for me, then, consistently with any principle of honour or duty, to surrender the high trust which you have reposed in me, or, though bound implicitly to obey the instructions of your directors, to connive at the mischief which those instructions appear to me, and to my counsel, and to high legal authorities among yourselves, directly calculated to produce? If you think that, in discharging this duty, I am likely to prejudice your interests, it is for you, who gave me the authority, and for you alone, to revoke it; but I cannot release myself, or allow myself to be discharged by others, from a solemn trust which I have received directly from your hands; but if you concur in the opinion, which I am happy to say that many of you have expressed, that I have entitled myself to your gratitude, both by my long and successful professional management of your affairs, and by the resolution with which I have acted on this occasion, notwithstanding the frowns of the directors, then I am sure that you will not permit me to be visited both in character and purse, without being openly accused, and without being heard against accusation; nor will you withhold your protection from me, after twenty-two years of faithful and irreproachable service. It was intimated to me only a week before the resolution for my removal, that as a condition precedent of any reconciliation (or in other words, of my being continued in office), I must resign your retainer; I refused to do so, because I considered that such a step was opposed to the honourable discharge of my duty to you. I have no other fact to communicate, but this, that the senior member of the board has resigned his seat, in avowed dissatisfation with these proceedings.

I have the honour to remain, your very faithful servant,

17, *King's Arms-yard, Coleman-street, April* 29*th*. GEORGE STEPHEN.

[*For continuation of "Original Correspondence," see p.* 169.]

PATENT GALVANISED IRON COMPANY—THE QUEEN *v.* CRAUFURD.—Counsel having been heard on both sides with reference to this case, to which we have more than once adverted in our columns, as determining the right of patent or otherwise, claimed by the defendants, we are given to understand, that the Attorney-General has granted his *fiat*, and has issued a writ of *scire facias* against the patent claimed on the part of the company.